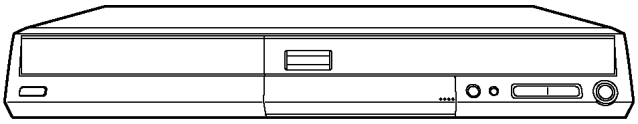
ORDER NO.DSD0508065CE
B24

Service Manual

DVD Video Recorder



Notes: This model's DVD Drive is VXY1872.

When replacing with Digital P.C.B. or HDD, "UNFORMAT" indication is displayed and HDD must be formatted.
After that, programme in the HDD will be lost.
In detail, please refer to each content in this service manual.

DMR-EH60PC
DMR-EH60PL
DMR-EH60GT

Vol. 1

Colour

(S).....Silver Type

Panasonic

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Introduction

This service manual contains technical information which will allow service personnel's to understand and service this model.
Please place orders using the parts list and not the drawing reference numbers.

If the circuit is changed or modified, this information will be followed by supplement service manual to be filed with original service manual.

1) This service manual does not contain the following information, because of the impossibility of sevicing at component level.

   * Schematic Diagram, Block Diagram and P.C.B. layout of Digital P.C.B.
   * Parts List for individual parts of Digital P.C.B.
   * Exploded View and Parts List for individual parts of RAM drive.

2) The following category are recycle module part. Please send them to Central Repair Center.

   * Digital P.C.B. (EH60PC:VEP79108A, EH60PL:VEP79108AC, EH60GT:VEP79108AB)
   * RAM drive (VXY1872)

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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1 Specifications

Power supply	EH60PC	AC120 V, 60 Hz
	EH60PL	AC120 V, 50/60 Hz
	EH60GT	AC110 V, 60 Hz
Power consumption	EH60PC	Approx. 31 W
	EH60PL	Approx. 31 W
	EH60GT	Approx. 30 W
Power consumption in standby mode	EH60PC	Approx. 13.7 W
	EH60PL	Approx. 13.7 W
	EH60GT	Approx. 12.8 W
Recording system	DVD-RAM: DVD Video Recording format DVD-R: DVD-Video format DVD-RW : DVD-Video format	
Optical pick-up	System with 1 lens, 2 integrated units (662 nm wavelength for DVDs, 795 nm wavelength for CDs)	
Recordable discs	・DVD-RAM: Ver.2.0 Ver.2.1/3X-SPEED DVD-RAM Revision 1.0 Ver.2.2/5X-SPEED DVD-RAM Revision 2.0 ・DVD-R: for General Ver. 2.0 for General Ver. 2.0/4X-SPEED DVD-R Revision 1.0 for General Ver. 2.x/8X-SPEED DVD-R Revision 3.0 ・DVD-RW: Ver. 1.1 Ver. 1.1/2X-SPEED DVD-RW Revision 1.0 Ver. 1.2/4X-SPEED DVD-RW Revision 2.0 ・+R: Ver. 1.0 Ver. 1.1 Ver. 1.2	
Intenal HDD Capacity	200 GB	
Quick Start for Recording & EPG Display (Quick Start: ON) (EH60PC only)	1 Sec. Quick Start for Recording on DVD-RAM and HDD & EPG Display* *From the power off state, for recording on DVD-RAM and HDD starts in about 1 second after the REC button is pressed. If the GUIDE button is pressed while the unit is off, the Electronic Program Guide (EPG) displays in less than 1 second, with the full EPG displaying in about 1.5 seconds. (Quick Start Mode)	
Quick Start for Recording (Quick Start: ON) (EH60PL, EH60GT only)	1 Sec. Quick Start for Recording on DVD-RAM and HDD* *From the power off state, for recording on DVD-RAM and HDD starts about 1 second after first pressing the power button and then sequentially pressing the REC button (Quick Start Mode).	
Recording time	・Max. 8 hours (using 4.7 GB disc) XP: 60 minutes SP: 120 minutes LP: 240 minutes EP: 360 minutes or 480 minutes ・Max. 355 hours with HDD (EP 8H mode)	
Region number	EH60PC	Region No.1
	EH60PL	Region No.4
	EH60GT	Region No.3
Playable discs	DVD-RAM, DVD-R, DVD-RW, +R, +RW DVD-VIDEO, DVD-Audio, CD-Audio (CD-DA), Video CD, CD-R/ CD-RW (CD-DA, Video CD, MP3, JPEG formatted discs)	
Compression Method	MP3	
	Format: ISO9660 level1 or 2 (except for extended formats), Joliet Compatible compression rate : 32kbps ~ 320kbps Compatible sampling rate : 16kHz, 22.05kHz, 24kHz, 32kHz, 44.1kHz, 48kHz This unit not compatible with ID3 tags.	
	CD (JPEG)	
	Format: ISO9660 level1 or 2 (except for extended formats), Joliet Compatible pixels : between 34 × 34 and 6144 × 4096 pixels Sub Sampling 4:2:2 or 4:2:0 This unit not compatible with MOTION JPEG.	
	MP3, CD (JPEG) Common Items	
	Maximum number of folders : 99 (one disc) Maximum number of files : 999 (one disc) This unit is compatible with multi-session. This unit is not compatible with packet writing.	

Television system		
TV system	NTSC system, 525 lines, 60 fields	
Antenna reception input	EH60PC, EH60GT	TV Channel: 2ch-69ch, 75 Ω CATV Channel: 1ch-125ch, 75 Ω
	EH60PL	TV Channel: VHF: 2ch-13ch, 75 Ω UHF:14ch-69ch, 75 Ω CATV Channel: 5A & A-5ch-EEEch, 75 Ω
Video system		
Recording system	MPEG2 (Hybird VBR)	
Input	・LINE (pin jack) × 3, 1.0 Vp-p; 75 Ω ・S connector × 3 Y: 1.0 Vp-p; 75 Ω C: 0.286 Vp-p; 75 Ω	
Output	・LINE (pin jack) × 2, 1.0 Vp-p; 75 Ω ・S connector × 2 Y: 1.0 Vp-p; 75 Ω C: 0.286 Vp-p; 75 Ω	
Component video output (480P/480i)	Y: 1.0 Vp-p; 75 Ω P_B: 0.7 Vp-p; 75 Ω P_R: 0.7 Vp-p; 75 Ω	
Audio system		
Recording system	Dolby Digital (2ch), Linear PCM (XP mode, 2ch)	
Input	LINE (pin jack) × 3 Reference input: 309 mVrms FS: 2 Vrms (1 kHz, 0 dB) Input impedance: 47 kΩ	
Output	LINE (pin jack) × 2 Reference output: 309 mVrms FS: 2 Vrms (1 kHz, 0 dB) Output impedance: 1 kΩ (Load impedance: 10 kΩ)	
Number of channels	Recording: 2 channels Playback: 2 channels	
Other input/output connector	Digital audio optical output connector (PCM, Dolby Digital, DTS)	
DV Input IEEE 1394 Standard, 4pin		
SD card slot		
Still Picture (JPEG,TIFF)	SD memory card slot : 1 pc	
Compatible Media	SD memory card*/Multi Media Card *Includes miniSD™ cards. (A miniSD™ card adapter needs to be inserted.)	
Format	FAT12 , FAT16	
Image file format	・JPEG conforming to DCF (Design rule for Camera File system) (sub sampling; 4 : 2 : 2 or 4 : 2 : 0) ・TIFF (Uncompressed RGB chunky) ・DPOF Compatible	
Number of pixels	34 × 34 to 6144 × 4096	
Thawing time	Approx. 7sec (2M pixels)	
Others		
G-LINK terminal (EH60PC Only)	Only use the included IR Blaster	
Dimensions	Approx. 430 (W) × 63 (H) × 350.5 (D) mm [Approx. 16 15/16 "(W) × 2 1/2 "(H) × 13 13/16"(D)] (excluding protrusions)	
Mass	Approx. 4.5 kg (9.92 lbs)	
Operating temperature range	5˚C - 40˚C (41˚F - 104˚F)	
Operating humidity range	10% - 80% RH (no condensation)	
Clock unit	Quartz-controlled 12-hour digital display	
LASER Specification	(Class I LASER Product)	
Wave Length	795 nm(CDs), 662 nm(DVDs)	
Laser Power	No hazardous radiation is emitted with the safety protection.	
Solder	These models use lead free solder (PbF)	

Notes : Specifications are subject to change without notice.
Mass and dimensions are approximate.

2 Safety precautions

2.1. General guidelines

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

2.1.1. Leakage current cold check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1MΩ and 5.2MΩ.
   When the exposed metal does not have a return path to the chassis, the reading must be ∞.

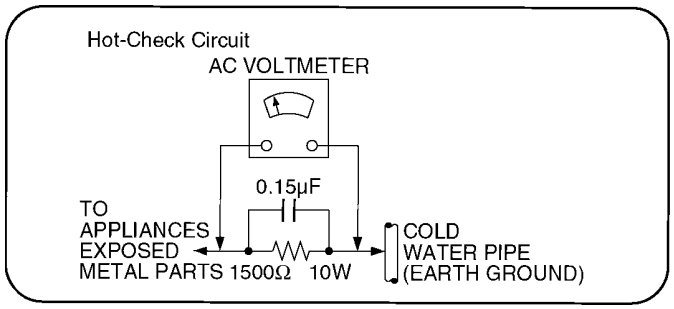


Figure 1

2.1.2. Leakage current hot check (See Figure 1 .)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5kΩ, 10 watts resistor, in parallel with a 0.15µF capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliampere. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

2.2. Caution for fuse replacement

(For English)
CAUTION:
Replace with the same type fuse:
(Manufacturer: Hollyland, Type:50T, 2A, 250V)

(For Canadian French)
ATTENTION:
Utiliser un fusible de rechange de même type:
(Fabricant: Hollyland, Type: 50T, 2A, 250V)

3 Prevention of Electrostatic Discharge (ESD) to Electrostatic Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatic Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistor-sand semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

   Caution

   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise hamless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are imporant for safety.
These parts are marked by ⚠ in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

4 Precaution of Laser Diode

CAUTION:

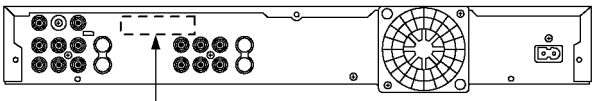
This product utilizes a laser diode with the unit turned “on”, invisible laser radiation is emitted from the pickup lens.
Wave length: 662 nm (DVDs) /795 nm (CDs)
Maximum output radiation power from pickup: 100 μ W/VDE
Laser radiation from the pickup lens is safety level,but be sure the followings:

1. Do not disassemble the optical pickup unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pickup lens for a long time.

ACHTUNG:

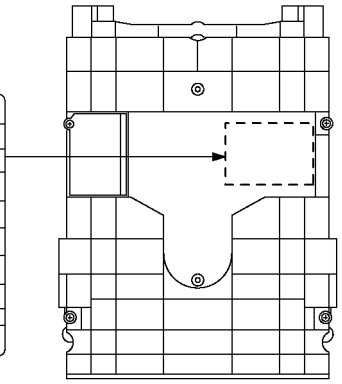
Dieses Produkt enthält eine Laserdiode.
Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Laserinheit abgestrahlt.
Wellenlänge: 662 nm (DVDs) /795 nm (CDs)
Maximale Strahlungsleistung der Lasereinheit: 100 μ W/VDE
Die Strahlung der Lasereinheit ist ungefährlich, wenn folgende Punkte beachtet werden:

1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode gefährlich ist.
2. Den werkseitig justierten Einstellregler der Lasereinheit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlinse blicken.
4. Nicht über längere Zeit in die Fokussierlinse blicken.



**Product complies with DHHS Rules 21 CFR Subchapter J in effect at date of manufacture.
Matsushita Electric Industrial Co., Ltd.
Kadoma, Osaka, Japan**

DANGER	- VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM. (FDA 21 CFR)
CAUTION	- VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM. (IEC60825-1)
ATTENTION	- RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU.
ADVARSEL	- SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO!	- AVATTAESSA OLET ALTTIINA NÄKYVÄÄ JA NÄKYMÄTÖN LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING	- SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. BETRAKTA EJ STRÅLEN.
ADVARSEL	- SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN.
VORSICHT	- SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.
注 意	- 打开时有可见及不可见激光辐射。避免激光束照射。
注 意	- ここを開くと可視及び不可視のレーザー光が出ます。ビームを直接見たり、触れたりしないでください。 RQLS0233



CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

5 How to replace the Lithium Battery

REPLACEMENT PROCEDURE

1. Remove the Top case and DVD-RAM drive unit with Main P.C.B. by referring the Disassembling Procedure.
2. Unsolder the Lithium Batteries: B7501 and then replace it into new one.
   (As shown in 21.2.4. The Main P.C.B.)

NOTE:

The lithium battery is a critical component. (Type No.: CR2450HE4Y Manufactured by SONY.)Part No.: N4BCT50A0005

It must never be subjected to excessive heat or discharge.

It must therefore only be fitted in equipment designed specifically for its use.

Replacement batteries must be of the same type and manufacture.

They must be fitted in the same manner and location as the original battery, with the correct polarity contacts observed.

Do not attempt to re-charge the old battery or re-use it for any other purpose.

It should be disposed of in waste products destined for burial rather than incineration.

(For English)

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the equipment manufacturer.
Discard used batteries according to manufacturer's instructions.

(For French)

PRECAUTION

Le fait de remplacer incorrectement la pile peut présenter des risques d'explosion.
Remplacer la pile uniquement par une pile identique ou de type équivalent recommandée par le fabricant. Se débarrasser des piles usagées conformément aux instructions du fabricant.

6 Handling the Lead-free Solder

6.1. About lead free solder (PbF)

Distinction of PbF P.C.B.:

P.C.B.s (manufactured) using lead free solder will have a PbF stamp on the P.C.B.

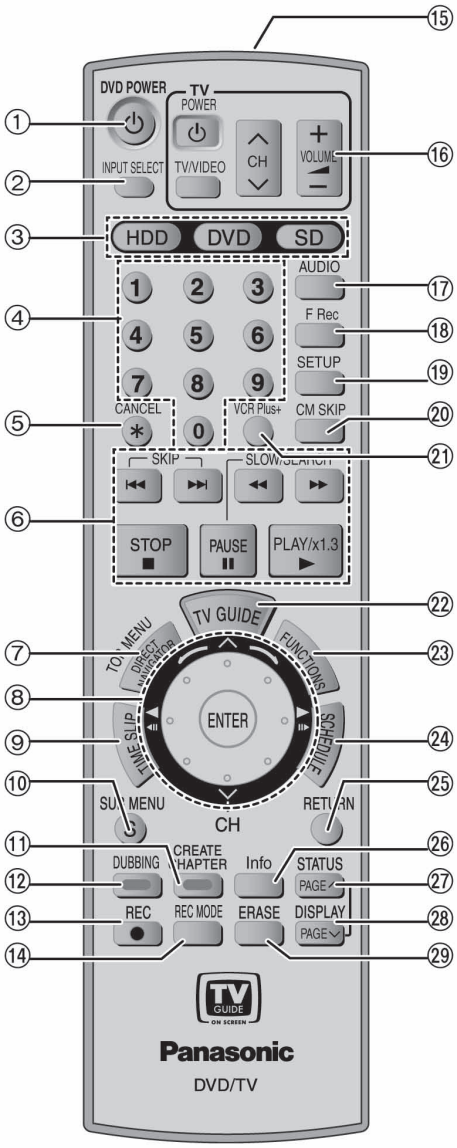
Caution:

- Pb free solder has a higher melting point than standard solder; Typically the melting point is 50 - 70°F (30 - 40°C) higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 700 ± 20°F (370 ± 10°C).
- Pb free solder will tend to splash when heated too high (about 1100°F/600°C).
- When soldering or unsoldering, please completely remove all of the solder on the pins or solder area, and be sure to heat the soldering points with the Pb free solder until it melts enough.

7 Each Button

Remote control

Instructions for operations are generally described using the remote control.



① Turn the unit on
② Input select (IN1, IN2, IN3 or DV)
③ Select drive (HDD, DVD or SD)
④ Select channels and title numbers, etc./Enter numbers
⑤ Cancel
⑥ Basic operations for recording and play
⑦ Show Top menu/Direct Navigator
⑧ Smart Wheel (➡ below)
⑨ Skip the specified time/Display the television image as a picture-in-picture
⑩ Show sub menu
⑪ Create chapters
"Green" button for television program list
"Green" button for Direct Navigator
⑫ One touch transfer (dubbing)
"Blue" button for television program list
"Blue" button for Direct Navigator
⑬ Start recording
⑭ Change recording mode
⑮ Transmission window
⑯ Television operations
⑰ Select audio
⑱ Start Flexible Recording
⑲ Show SETUP menu
⑳ Skip a minute forward
㉑ Show VCR Plus+ screen
㉒ Show television program list
(TV Guide On Screen™ system)
㉓ Show FUNCTIONS window
㉔ Show scheduled recording list
㉕ Return to previous screen
㉖ Changing the size of information window
㉗ Show status messages/Skip one page upward
㉘ Show on-screen menu/Skip one page downward
㉙ Erase items

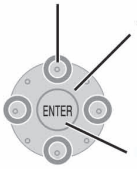
Note

- Buttons such as the [● REC] button do not protrude as much as other buttons to stop them from being pressed accidentally.
- The word "button" is not used in these operating instructions so "Press the [ENTER] button." is shown as "Press [ENTER]."
- You can use this remote control to operate your television if you set the television manufacturer code.

■ Smart Wheel operation

- **Select items on menu screens and set items.**

Press up, down, left or right to select an item.



You can also turn the wheel to select an item.

Press [ENTER] to confirm.

These operations are also possible.....

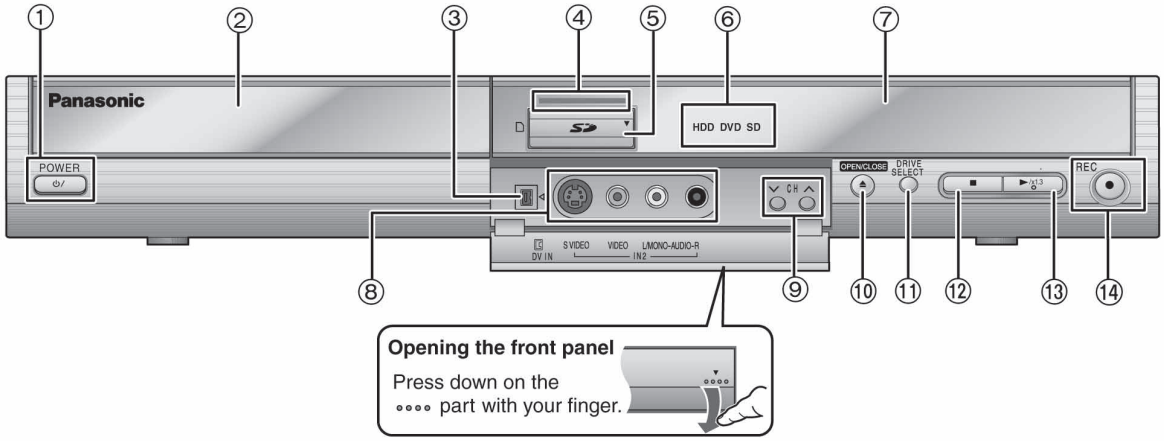
●Changing channels:	Press [∧] or [∨] (up/down)
●Frame-by-frame (backward/forward):	Press [◀❚❚] or [❚❚▶] (left/right)
●Forward search/slow-motion:	Turn right
●Backward search/slow-motion:	Turn left

Note

Press the Smart Wheel lightly when turning it.

If you press it strongly when turning it, [▲, ▼, ◄, ►] may be mistakenly activated.

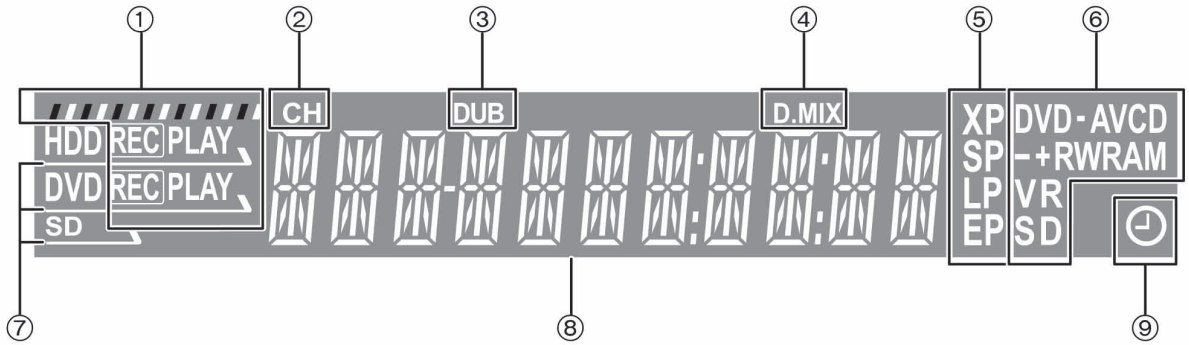
Main unit



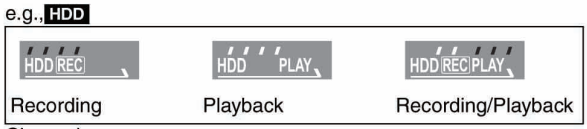
① **POWER button (POWER ⏻/I)**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
② Disc tray
③ Connector for a digital video (DV) camcorder
④ Lights when the unit is turned on (if “Front Display” is set to “Bright”)
⑤ SD card slot
⑥ Lights when the HDD, DVD or SD drive is selected
⑦ Display (➡ below)
⑧ Connectors for external equipment
⑨ Channel select
⑩ Open/close disc tray
⑪ Select drive
Drive changes each time you press [DRIVE SELECT].
⑫ Stop
⑬ Start play
⑭ Start recording/Remote control signal sensor
Specify the time to stop recording

Rear panel terminals

The unit’s display



① e.g., HDD



② Channel
③ Transferring (dubbing) indicator
④ D.MIX (multi-channel DVD-Audio only)
When lit: Down-mixing is possible.
When off: The disc prevents down-mixing so only the two front channels can be played.
⑤ Recording mode
⑥ Disc type
⑦ Lights when the HDD, DVD or SD drive is selected
⑧ Main display section
⑨ Scheduled recording indicator

8 New Feature

8.1. Quick start function(REC)

1. General

A few seconds after tuning on the unit,you can start recording to DVD-RAM,HDD.

You can switch the operation of this function (ON/OFF) on the menu screen. .

2. Quick start(REC) principle

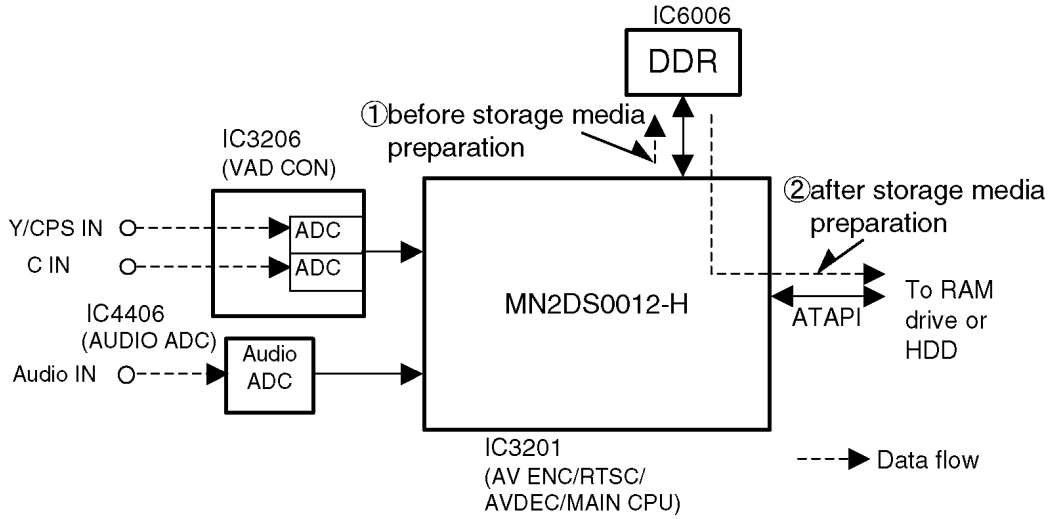
In the power-off at Quick start, only power supplies for video IC,tuner and storage media are cut off.

①When the REC button is pushed a few second after the power button is pushed, Audio and Video data are stored in DDR SDRAM before a storage media(DVD-RAM or HDD) preparation.

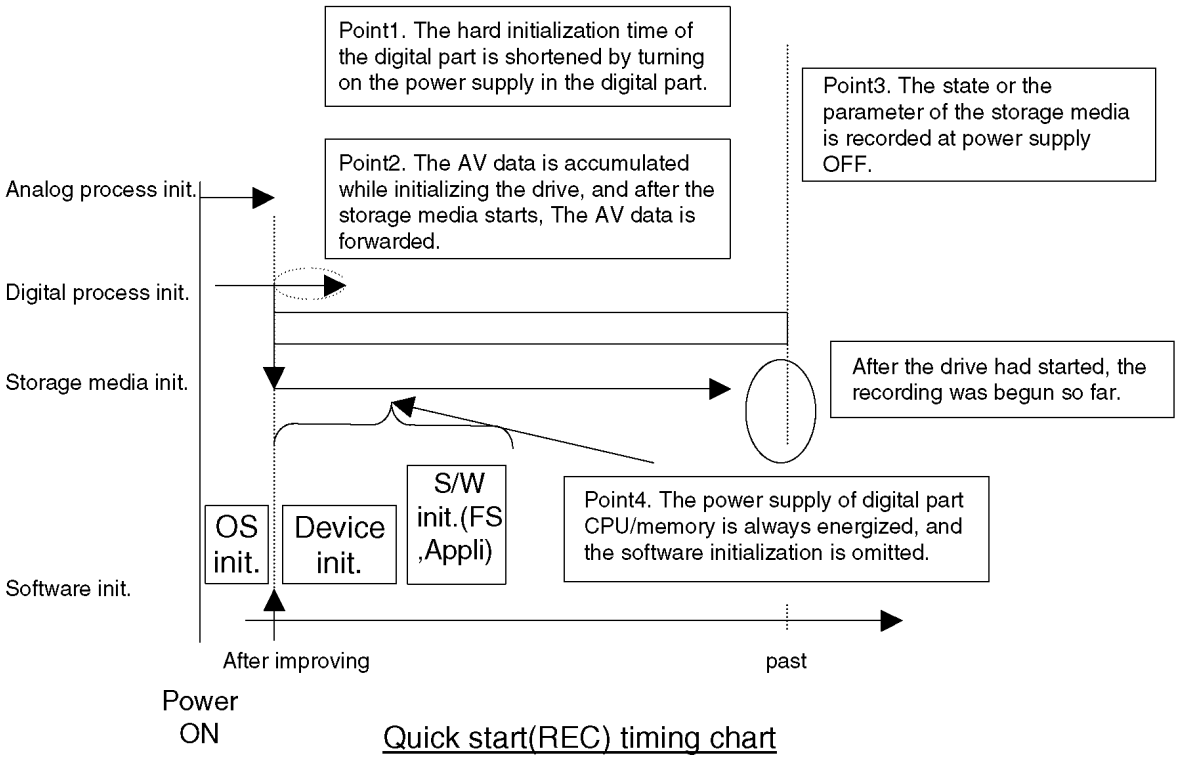
*Preparation time → DVD-RAM: about 8seconds

HDD: about 18seconds

②After a storage media(DVD-RAM or HDD) preparation,Audio and Video data are transfer from DDR SDRAM to the storage media.



Quick start(REC) explanation chart


Point1. The hard initialization time of the digital part is shortened by turning on the power supply in the digital part.
Point2. The AV data is accumulated while initializing the drive, and after the storage media starts, The AV data is forwarded.
Point3. The state or the parameter of the storage media is recorded at power supply OFF.
Analog process init.
Digital process init.
Storage media init.
After the drive had started, the recording was begun so far.
OS init.
Device init.
S/W init.(FS ,Appli)
Point4. The power supply of digital part CPU/memory is always energized, and the software initialization is omitted.
Software init.
After improving
past
Power ON

Quick start(REC) timing chart

9 Taking out the Disc from RAM-Drive Unit when the Disc cannot be ejected by OPEN/CLOSE button

9.1. Forcible Disc Eject

9.1.1. When the power can be turned off.

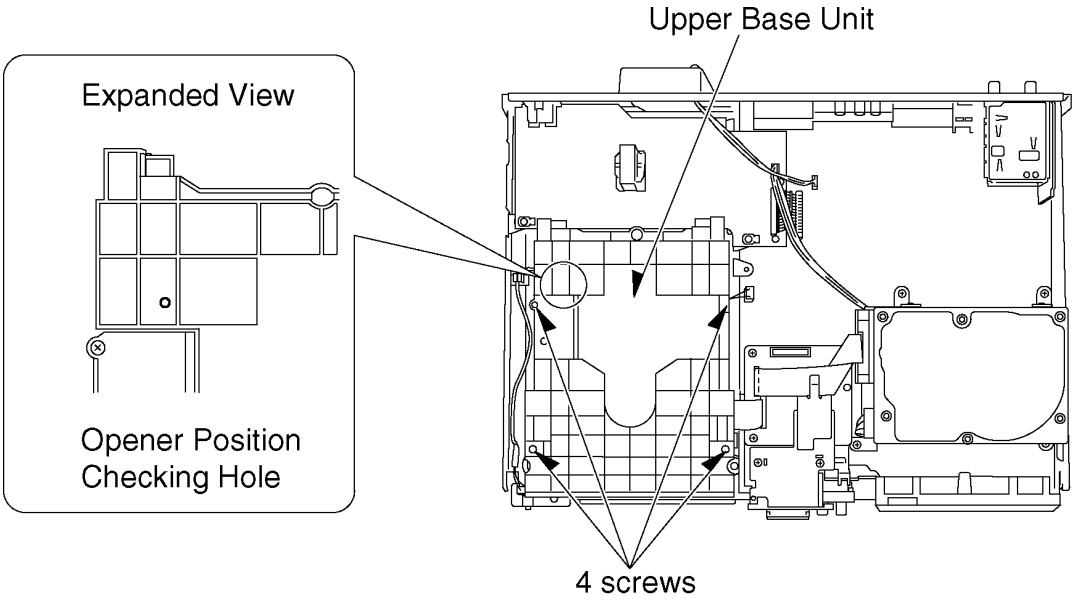
1. Turn off the power and press [STOP] [CH UP] keys on the front panel simultaneously for 5 seconds.

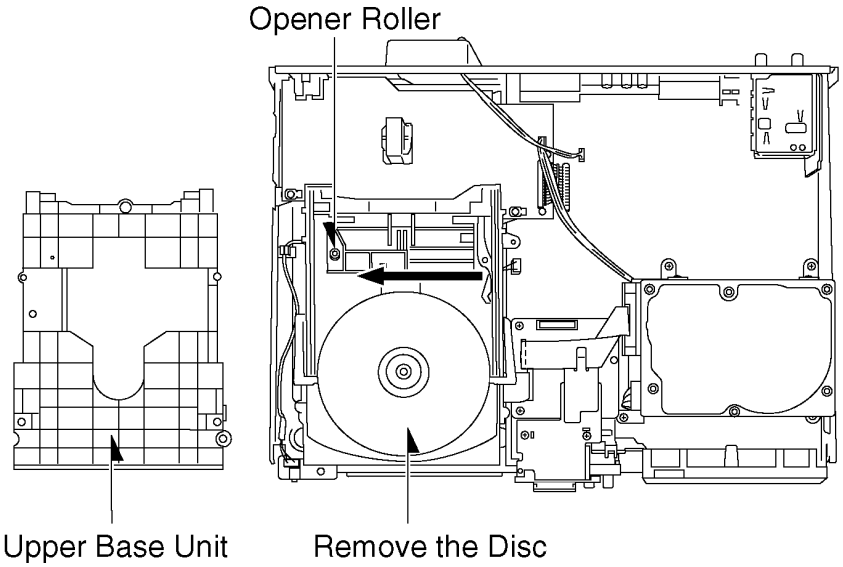
9.1.2. When the power can not be turned off.

1. Press [POWER] key on the front panel for over 10 seconds to turn off the power forcibly, and press [STOP] [CH UP] keys on the front panel simultaneously for 5 seconds.

9.2. When the Forcible Disc Eject can not be done.

1. Turn off the power and pull out AC cord.
2. Remove the Top Cover.
3. Remove the Front Panel.
4. Remove 4 screws and Upper Base Unit from DVD-RAM Drive.
5. Take out the disc and put the Opener Roller on fully position for direction of Arrow.
6. Put the Upper Base Unit so that the Opener Roller is inserted into the groove.
7. Check Opener Roller is seen through the Opener position Checking Hole, and tighten 4 screws.





10 Service Explorer

Confirm "RAM-Drive Last Error" in Service Mode

Execute Service Mode

1. Press [REC], [CH UP] and [OPEN/CLOSE] simultaneously for 5 seconds when P-off.
   FL Display:

   SERVICE MODE

   *After finishing display "(7). Factor of Drive Error occurring", press [0] [2] ~[1] [9] keys of the Remote Controller so that 19 memories can be displayed as maximum.
2. Press [4] [2] keys of remote controller.

   Example of FL Display:

   (1) Error Number is displayed for 5 seconds.

   NO 01

   (2) Time when the error has occurred is displayed for 5 seconds.

   50216191526

   The error has occurred at 2005(year)/Feb.(month)/16(day)/19(hour):15(minute):26(second)

   (3) Last Drive Error (1/2) is displayed for 5 seconds.

   03 1000

   Error Sense Key
   - 00: Bad disc
   - 03: Bad disc
   - 04: Bad disc or RAM-Drive malfunction

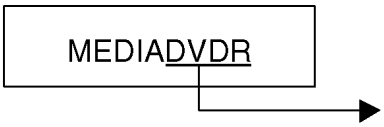
When above error codes are displayed, confirm operation with Panasonic RAM disc or Panasonic DVD-R disc.
***If the operation is OK, judge the error is due to media.**
***If the operation is NG and symptom as BLOCK NOISES and so on that are particular symptom of Digital appears, judge the error is due to RAM-Drive or Digital PCB.**

   (4) Last Drive Error (2/2) is displayed for 5 seconds.

   00 13 00 00

   *This error code is unnecessary for service.

(5) Error occurring Disc type is displayed for 5 seconds.



Disc type
*The error disc cannot be specified, display as "DVD".

(6) Disc Maker´s ID is displayed for 5 seconds.

Example of Disc Maker´s ID:

DVD-R Disc

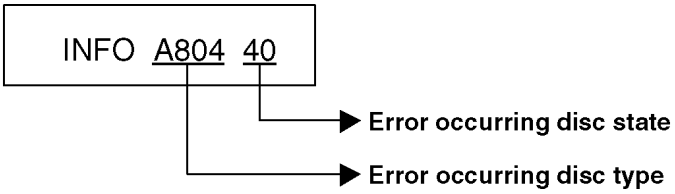
No.	FL Display (Disc Maker´s ID)	Disc Maker	Country
1	MEI	Panasonic	Japan
2	PVC	Pioneer	Japan
3	MCC	Mitsubishi Chemical Corporation	Japan
4	TDK	TDK	Japan
5	MXL	Maxell	Japan
6	MCI	MITUI CHEMICALS	Japan
7	JVC	Victor JVC	Japan
8	TAIYOYUDEN	Taiyo yuden	Japan
	TYG		
9	GSC	Giga Storage	Taiwan
10	PRODISC	Prodisc	Taiwan
11	PRINCO	PRINCO	Taiwan
12	RITEK	RITEK	Taiwan
13	OPTDISC	OPTDISC	Taiwan
14	LEAD DATA	LEAD DATA	Taiwan
15	CMC	CMC	Taiwan
16	AUVISTAR	AUVISTAR	Taiwan
17	ACER	Acer	Taiwan
18	VIVASTAR	VIVASTAR	Switzerland
19	LGE	LG Electronics	Korea

DVD-RAM Disc

No.	FL Display (Disc Maker´s ID)	Disc Maker	Country
1	MEI	Panasonic	
2	MATSUSHITA	Panasonic	Japan
3	MXL	Maxell	Japan
4	PRODISC	Prodisc	Taiwan
5	OPTDISC	OPTDISC	Taiwan
6	CMC	CMC	Taiwan

*Since an display is arbitrarily set up by the disk producer side, the above-mentioned display may be changed. Please make it reference as an example of a display.

(7) Factor of Drive Error occurring is left displayed



Error Occurring Disc Type

FL Display	Disc Type
00	DVD-ROM/Video
01	Audio-CD
02	2.6GB DVD-RAM
03	4.7GB DVD-RAM
04	DVD-R

Error Occurring Disc State

FL Displays (Hexadecimal)	Description			
	Disc distinction state	Cartridge disc state	Cartridge disc state	Disc size
00	OK	With cartridge	Has not been opened yet.	12 cm
10	OK	With cartridge	Has not been opened yet.	8 cm
20	OK	With cartridge	Has been opened.	12 cm
30	OK	With cartridge	Has been opened.	8 cm
40	OK	Bare	Has not been opened yet.	12 cm
50	OK	Bare	Has not been opened yet.	8 cm
60	OK	Bare	Has been opened.	12 cm
70	OK	Bare	Has been opened.	8 cm
80	NG	With cartridge	Has not been opened yet.	12 cm
90	NG	With cartridge	Has not been opened yet.	8 cm
A0	NG	With cartridge	Has been opened.	12 cm
B0	NG	With cartridge	Has been opened.	8 cm
C0	NG	Bare	Has not been opened yet.	12 cm
D0	NG	Bare	Has not been opened yet.	8 cm
E0	NG	Bare	Has been opened.	12 cm
F0	NG	Bare	Has been opened.	8 cm

11 Self-Diagnosis and Special Mode Setting

11.1. Self-Diagnosis Functions

Self-Diagnosis Function provides information for errors to service personnel by “Self-Diagnosis Display” when any error has occurred.

U, H** and F** are stored in memory and held.**

You can check latest error code by transmitting [0] [1] of Remote Controller in Service Mode.

Automatic Display on FL will be cancelled when the power is turned off or AC input is turned off during self-diagnosis display is ON.

Error Code	Diagnosis contents	Description	Monitor Display	Automatic FL display
U30	Remote control code error	Display appears when main unit and remote controller codes are not matched.	No display	*CHK REMOTE “*” is remote controller code of the main unit. Display for 5 seconds.
U59	Abnormal inner temperature detected	Display appears when the drive temperature exceeds 70°C. The power is turned off forcibly. For 30 minutes after this, all key entries are disabled. (Fan motor operates at the highest speed for the first 5 minutes. For the remaining 25 minutes, fan motor is also stopped.) The event is saved in memory as well.	No display	U59 “U59 is displayed for 30 minutes.
U99	Hang-up	Displayed when communication error has occurred between Main microprocessor and Timer microprocessor.	No display	U99 Displayed is left until the [POWER] key is pressed.
H19	Inoperative fan motor	When inoperative fan motor is detected after powered on, the power is turned off automatically. The event is saved in memory.	No display	No display
F00	No error information	Initial setting for error code in memory (Error code Initialization is possible with error code initialization and main unit initialization.)	No display	No display
F58	Drive hardware error	When drive unit error is detected, the event is saved in memory.	No display	No display
F34	Initialization error when main microprocessor is started up for program recording	When initialization error is detected after starting up main microprocessor for program recording, the power is turned off automatically. The event is saved in memory.	No display	No display
UNSUPPORT	Unsupported disc error	*An unsupported format disc was played, although the drive starts normally. *The data format is not supported, although the media type is supported. *Exceptionally in case of the disc is dirty.	**“This disc is incompatible.”**	UNSUPPORT Display for 5 seconds.
NO READ	Disc read error	*A disc is flawed or dirty. *A poor quality failed to start. *The track information could not be read.	**“Cannot read. Please check the disc.”**	NOREAD
HARD ERR	Drive error	The drive detected a hard error.	“**DVD drive error”.**	Display for 5 seconds. HARD ERR
SELF CHECK	Restoration operation	Since the power cord fell out during a power failure or operation, it is under restoration operation. *It will OK, if a display disappears automatically. If a display does not disappear, there is the possibility that defective Digital P.C.B. / RAM drive.	No display	SELF CHECK
Full Program	32 programs are already set.	32 programs are already set.	No display	PROG FULL

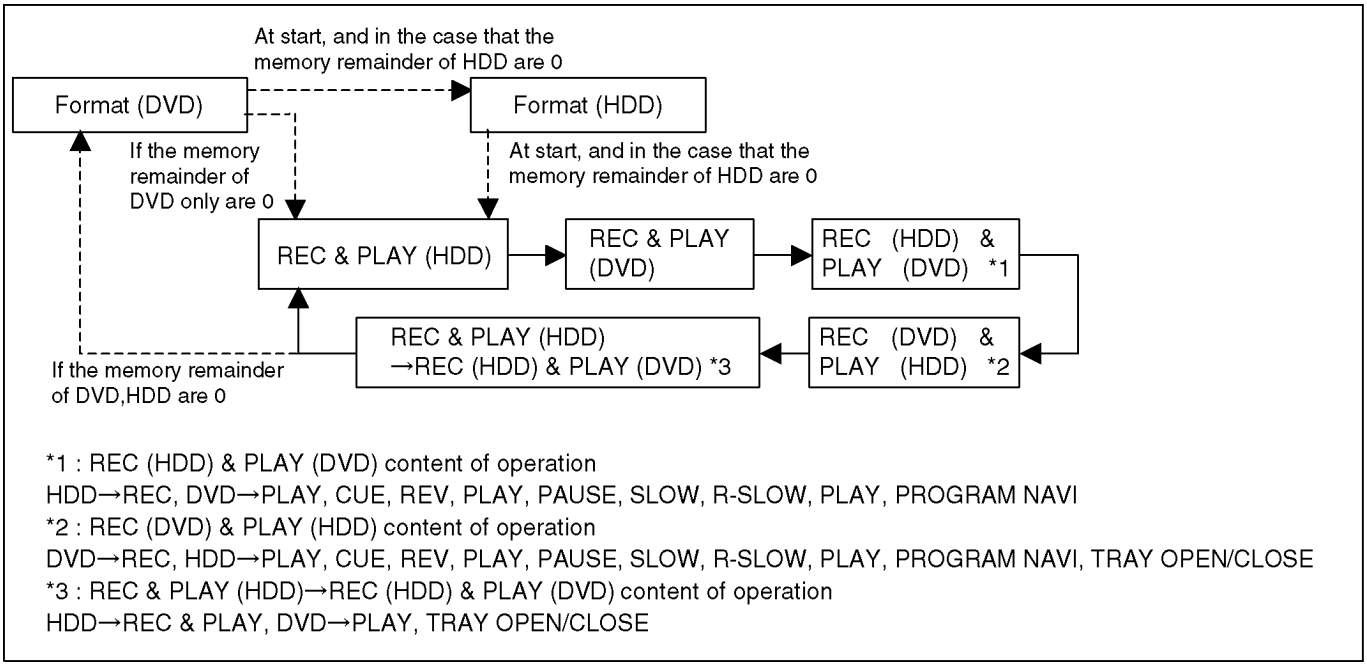
Error Code	Diagnosis contents	Description	Monitor Display	Automatic FL display
UNFORMAT	Unformatted disc error	You have inserted an unformatted DVD-RAM or DVD-RW that is unformatted or recorded on other equipment. If you will use this disc, format is necessary. But, all program recorded on this disc will be delected.	Format This disc is not formatted properly. Format the disc in DISK MANAGEMENT?	UNFORMAT
PLEASE WAIT	Unit is in termination process	Unit is in termination process now. "BYE" is displayed and power will be turned off. In case "Quick Start" of setup menu is ON, it is displayed in restoration operation for AC off.	No display	PLEASE WAIT

11.2. Special Modes Setting

Item		FL display	Key operation
Mode name	Description		Front Key
TEST Mode	*All the main unit´s parameters (include tuner) are initialized.	TEST L1	Press [STOP], [CH UP] and [OPEN/CLOSE] keys simultaneously for five seconds when power is off.
Rating password	The audiovisual level setting password is initialized to "Level 8".	INIT	Open the tray, and press [REC] and [PLAY] simultaneously for 5 seconds. **NOTE:** Drive should be selected to DVD.
Service Mode	Setting every kind of modes for servicing. *Details are described in "**11.3. Service Mode**".	SERVICE MODE	When the power is off, press [CH UP], [OPEN/CLOSE] and [REC] keys simultaneously for 5 seconds.
Forced disc eject	Removing a disc that cannot be ejected. The tray will open and unit will shift to P-off mode. *When Timer REC is ON, execute " Forced disc eject " after releasing Timer REC. *This command is not effective during "Child lock" is ON. While Demonstration Lock is being set, this Forced disc eject function is not accepted. If this command was executed while TIMER REC is being set, TIMER REC setting will be kept.	The display before execution leaves. **********	When the power is off, press [STOP] and [CH UP] keys simultaneously for 5 seconds.
Forced power-off	When the power button is not effective while power is ON, turn off the power forcibly. *When Timer REC is ON, execute "Forced Power-off" after releasing Timer REC.	Display in P-off mode.	Press [Power] key over than 10 seconds.
Aging	Perform sequence of modes as * Aging Description shown below continually. **Caution:** **All programs in HDD and DVD-RAM disc will be deleted because Formatting is done once in Aging process.**	Display following the then mode.	When the power is ON, press [STOP], [POWER] and [OPEN/CLOSE] simultaneously for over 5 seconds and less than 10 seconds. **NOTE1:** If Unit has not turned into Aging mode by operations shown above, execute TEST MODE once and re-execute operation shown above. (*All the main unit's parameters include tuner are initialized by TEST mode.) **NOTE2:** If the unit has hung-up because of pressing keys for over 10 seconds, once turn off the power, and re-execute this command. *When releasing Aging mode, press [POWER] key.

Item		FL display	Key operation
Mode name	Description		Front Key

Aging Contents (Example):
CAUTION: Condition of the following sequence execution.
*At start, DVD should be selected.


At start, and in the case that the memory remainder of HDD are 0
Format (DVD)
Format (HDD)
If the memory remainder of DVD only are 0
At start, and in the case that the memory remainder of HDD are 0
REC & PLAY (HDD)
REC & PLAY (DVD)
REC (HDD) & PLAY (DVD) *1
REC & PLAY (HDD) →REC (HDD) & PLAY (DVD) *3
REC (DVD) & PLAY (HDD) *2
If the memory remainder of DVD,HDD are 0

*1 : REC (HDD) & PLAY (DVD) content of operation
HDD→REC, DVD→PLAY, CUE, REV, PLAY, PAUSE, SLOW, R-SLOW, PLAY, PROGRAM NAVI
*2 : REC (DVD) & PLAY (HDD) content of operation
DVD→REC, HDD→PLAY, CUE, REV, PLAY, PAUSE, SLOW, R-SLOW, PLAY, PROGRAM NAVI, TRAY OPEN/CLOSE
*3 : REC & PLAY (HDD)→REC (HDD) & PLAY (DVD) content of operation
HDD→REC & PLAY, DVD→PLAY, TRAY OPEN/CLOSE

Demonstration lock/unlock	Ejection of the disc is prohibited. The lock setting is effective until unlocking the tray and not released by “Main unit initialization” of service mode.	*When lock the tray. LOCK “LOCK” is displayed for 3 seconds.	When the power is on, press [STOP] and [POWER] keys simultaneously for 5 seconds.
		*When unlock the tray. UNLOCK “UNLOCK” is displayed for 3 seconds.	When the power is on, press [STOP] and [POWER] keys simultaneously for 5 seconds.
		*When press OPEN/CLOSE key while the tray being locked. LOCK Display “LOCK” for 3 seconds.	Press [OPEN/CLOSE] key while the tray being locked.
ATP Initialization	ATP setting is initialized, and the unit turns off automatically.	It is same with display in stop mode. **********	When the power is on (E-E mode), press [CH UP] and [CH DOWN] simultaneously for 5 seconds.
Progressive initialization	The progressive setting is initialized to Interlace.	The display before execution leaves. **********	When the power is on (E-E mode), press [STOP] and [PLAY] simultaneously for 5 seconds.

11.3. Service Modes

Service mode setting: While the power is off, press **REC, CH UP and OPEN / CLOSE** simultaneously for five seconds.

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
Release Items	Item of Service Mode executing is cancelled.	SERVICE MODE	Press [0] [0] or [Return] in service mode.
Error Code Display	Last Error Code of U/H/F held by Timer is displayed on FL. *Details are described in **"11.1. Self-Diagnosis Functions".**	♣□□ *♣ shows U/H/F. □□ shows number.	Press [0] [1] in service mode
ROM Version Display	Region code, MAIN firm version, TIMER firm version and DRIVE firmware versions are displayed on FL for five seconds per each version in order, but ROM version will be left displayed.	REGION* MAIN ****** TIMER****** DRIVE **** ROM * *** " * " are version displays.	Press [0] [2] in service mode
White Picture Output	White picture is output as component Output from AV Decoder. *White picture (Saturation rate : 100%) *It is enable to switch Interlace/Progressive by "I/P switch: [1] [4]"	*Initial mode is "Interlace". WHIT I	Press [1] [1] in service mode.
		Switch Interlace/Progressive WHIT P	Press [1] [4] in White Picture Output mode. *I/P are switched alternately.
Magenta Picture Output	Magenta picture is output with Component Output from AV Decoder. *Magenta picture (Saturation rate: 100%) *It is enable to switch Interlace/Progressive by "I/P switch: [1] [4]"	*Initial mode is "Interlace". MAGE I	Press [1] [2] in service mode.
		Switch Interlace/Progressive MAGE P	Press [1] [4] in Magenta Picture Output mode. *I/P are switched alternately.
RTSC Return in XP (A & V)	L1 input signal is encoded (XP), decoded (XP) and output decoded signal to external without DISC recording and DISC playback.	Initial mode: EE2/ Interlace/ XP/ Audio 48kHz EE2 I XP 48	Press [1] [3] in service mode.
		Switch Interlace/Progressive EE2 P XP 48	Press [1] [4] in RTSC Return XP mode. *I/P are switched alternately.
		Audio 44.1 kHz/ 48 kHz Switch EE2 P XP 44	Press [2] [4] in RTSC Return XP mode. *48 kHz / 44.1 kHz are switched alternately.
I/P Switch	Switch Interlace and Progressive in EE mode. *Initial setting is "Interlace". *This command is effective during executing "White Picture Output", "Magenta Picture Output" and "RTSC Return in XP (A & V)" modes.	Initial mode is Interlace SERVICE I	Press [1] [4] in I/P Switch mode. *I/P are switched alternately.
		Switch Interlace/Progressive SERVICE P	

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
Audio Mute (XTMUTE)	Check whether mute is applied normally by the timer microprocessor.	TIMER MUTE	Press [2] [1] in service mode.
Audio Mute (XDMUTE)	Check whether mute is applied normally by the Digital P.C.B..	MAIN MUTE	Press [2] [2] in service mode.
Audio Pattern Output	The audio pattern stored in the internal memory is output (Lch: 1kHz/-18dB) (Rch: 400Hz/-18dB) *Audio sound clock switching operation of DAC can be confirmed by sub command [2] [4].	Initial mode (Audio 48kHz) AUDIO 48	Press [2] [3] in service mode.
		Audio 44.1kHz/48kHz switching AUDIO 44	Press [2] [4] in Audio Pattern Output mode. *48 kHz / 44.1 kHz are switched alternately.
HDD READ inspection	Perform a complete read inspection of the HDD.	When the HDD is OK HDD RDOK If the HDD is defective HDD RDNG□○○ **□:Judge of Forward rate.** *When normal (Forward rate is 35Mbps or more, and there is no HDD error): □ is Space. *When Abnormal (Forward rate is less than 35Mbps or HDD error existing): □ is X. **○○:Number of what have spent time for seeking is over 100ms.** *When normal: ○○ are spaces. *When Abnormal: Display Number of what have spent time for seeking over 100ms. However, if the number is more than 100, Display [XX]. We judge it is normal that the number is less than 4.	Press [3] [1] in the service mode. *When canceling the checking mode while executing, do “forced power-off”. Method: Press the “POWER” button more than 10 seconds.
Laser Used Time Indiction	Check laser used time (hours) of drive.	LASER*****	Press [4] [1] in service mode.
		I(*****) is the used time display in hour. ILaser used time of DVD/ CD in Playback/Recording mode is counted.	
Delete the Laser Used Time	Laser used time stored in the memory of the unit is deleted.	CLR LASER	Press [9] [5] in service mode.

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
RAM Drive Last Error	RAM Drive error code display. *For details about the drive error code, refer to the Service Manual for the specific RAM Drive. *Details are described in "**10. Service Explorer**".	1. Error Number is displayed for 5 seconds. NO ** 2. Time when the error has occurred is displayed for 5 seconds. YYYMMDDhhmm YYY: Year MM: Month DD: Day hh: Hour mm: Minute 3. Last Drive Error (1/2) is displayed for 5 seconds. ****** 4. Last Drive Error (2/2) is displayed for 5 seconds. ******** 5. Error occurring Disc type is displayed for 5 seconds. MEDIA****** 6. Disc Maker ID is displayed for 5 seconds. ********** 7. Factor of Drive Error occurring is left displayed INFO*******	Press [4] [2] in service mode. When "INFO******" is being displayed, past 19 error histories can be displayed by pressing [0] [1] - [1] [9] In case that the maker cannot be identified, display is black out.
Delete the Last Drive Error	Delete the Last Drive Error information stored on the DVD RAM-Drive.	CLR DRIVE	Press [9] [6] in service mode.
Turn on all FL/LEDs	All segments of FL and all LEDs are turned on.	All segments are turned on.	Press [5] [1] in service mode.
S1 signal output	Forcibly superimpose the S1 signal (approx. 4.5V DC) on the EE chroma signal, and check the output on the S terminal.	S1 OUTPUT	Press [5] [2] in service mode.
S2 signal output	Forcibly superimpose the S2 signal (approx. 2V DC) on the EE chroma signal, and check the output on the S terminal.	S2 OUTPUT	Press [5] [3] in service mode.
Front connection inspection	Press all front keys and check the connection between Main P.C.B. and Front key Switches.	000 ** (1) (2) (1) Each time a key is pressed, segment turned on increases one by one. (2) Total umber of keys that have been pressed.	Press [5] [4] in service mode.
Production Date Display	Display the date when the unit was produced.	PD YYYYMMDD YYYY: Year MM: Month DD: Day	Press [6] [1] in service mode.
Display the accumlated working time	Display the accumulated unit´s working time.	********** S (Indicating unit: Second)	Press [6] [4] in service mode.

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
Display the Error History	Display the Error History stored on the unit.	Display reason of error for 5 seconds. FTREC*** Display the time when the error has occurred for 5 seconds.. YYMMDDHHMM YY: Year MM: Month DD: Day HH: Hour MM: Minute Accumulated working time till occuring of the error is left displayed. ********** S (Indicating unit: Second)	Press [6] [5] in service mode. Then press [0] [1] ~ [1] [9], the past 19 error histories are displayed.
Delete the Error History	Delete Error History information stored on the unit.	CLR FTREC	Press [9] [7] in service mode.
SD card WRITE check	Check SD card. WRITE function with SD card slot.	When the WRITE check is OK. SDCD OK When the WRITE check is NG. SDCD NG *Note: The image stored in the SD card will be erased.	Insert a SD card to SD card slot, and press [7] [4] in service mode. *Insert SD card while the power is off. *Check for [CARD SD] display on the FL display and go on the procedure.
Tray OPEN/CLOSE Test	The RAM drive tray is opened and closed repeatedly.	NO********* "*" is number of open/close cycle times.	Press [9] [1] in service mode *When releasing this mode, press the [POWER] button of Remote Controller more than 10 seconds.
Error code initialization	Initialization of the last error code held by timer (Write in F00)	CLR E-CODE	Press [9] [8] in service mode.
Initialize Service	Last Drive Error, Error history and Error Codes stored on the unit are initialized to factory setting.	CLR SERV	Press [9] [9] in service mode.
Finishing service mode	Release Service Mode.	Display in STOP (E-E) mode. **********	Press power button on the front panel or Remote controller in service mode.

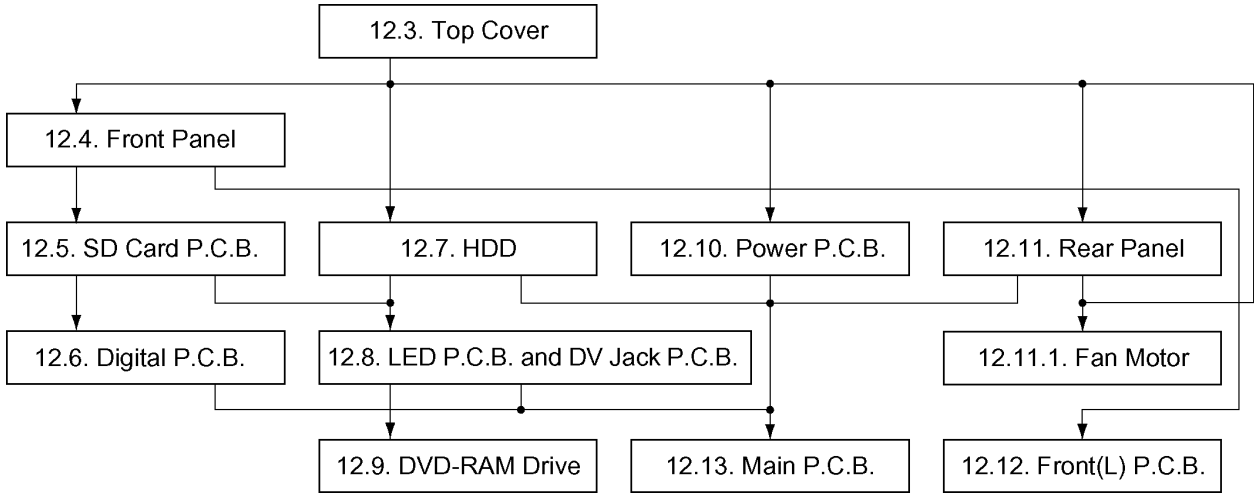
12 Assembling and Disassembling

Caution:
Original screws should be used.

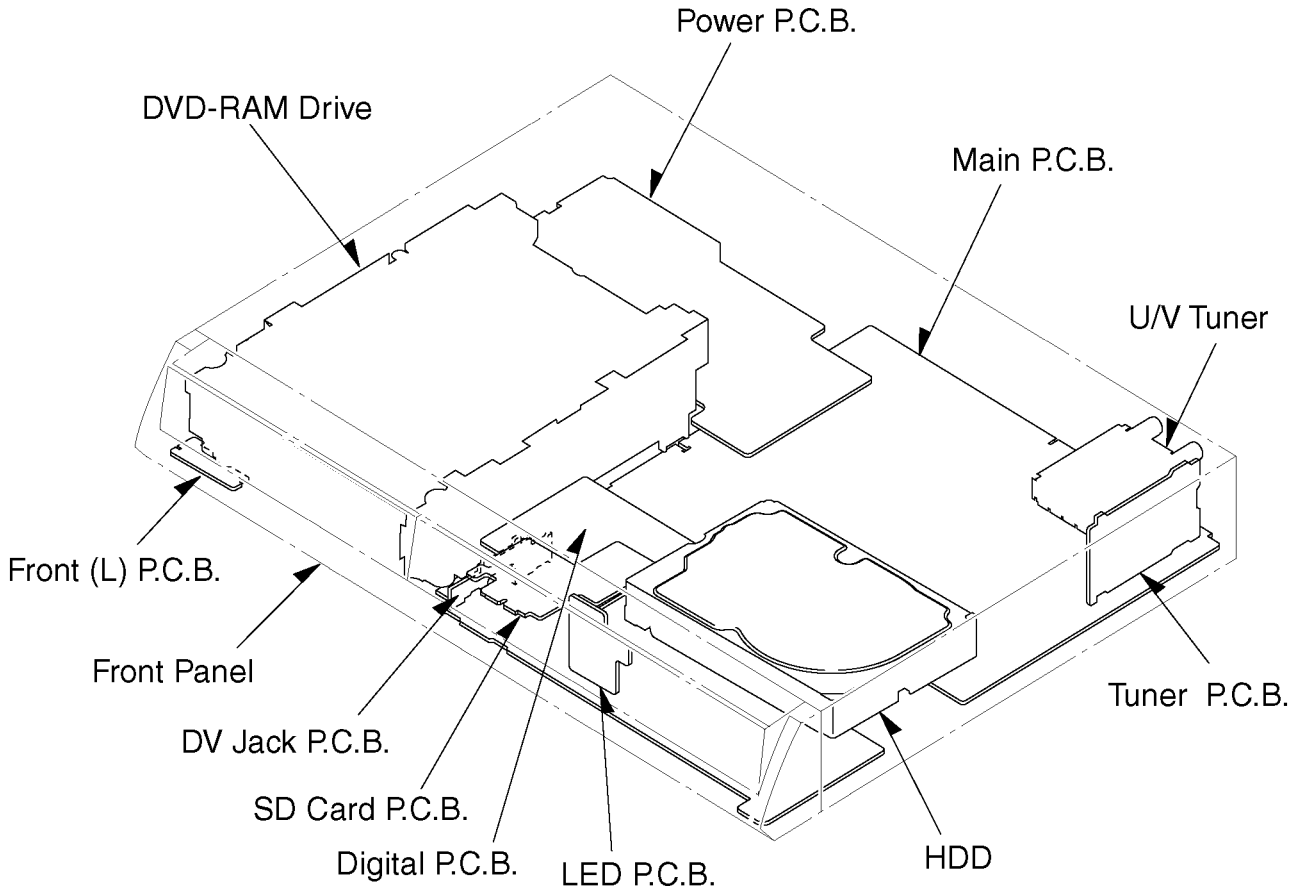
12.1. Disassembly Flow Chart

The following chart is the procedure for disassembling the casing and inside parts for internal inspection when carrying out the servicing.

To assemble the unit, reverse the steps shown in the chart below.

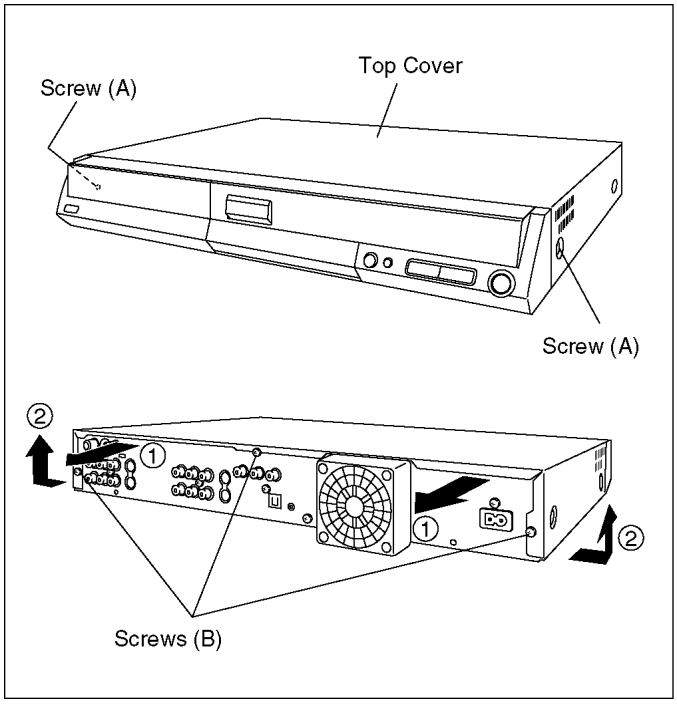


12.2. P.C.B. Positions



12.3. Top Cover

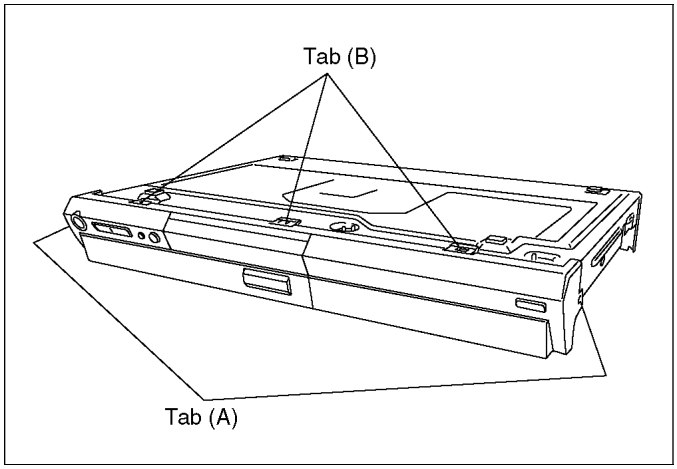
1. Remove the 2 screws (A) and 3 screws (B).
2. Slide Top Cover rearward and open the both ends at rear side of the Top Cover a little and lift the Top Cover in the direction of the arrows.



12.4. Front Panel

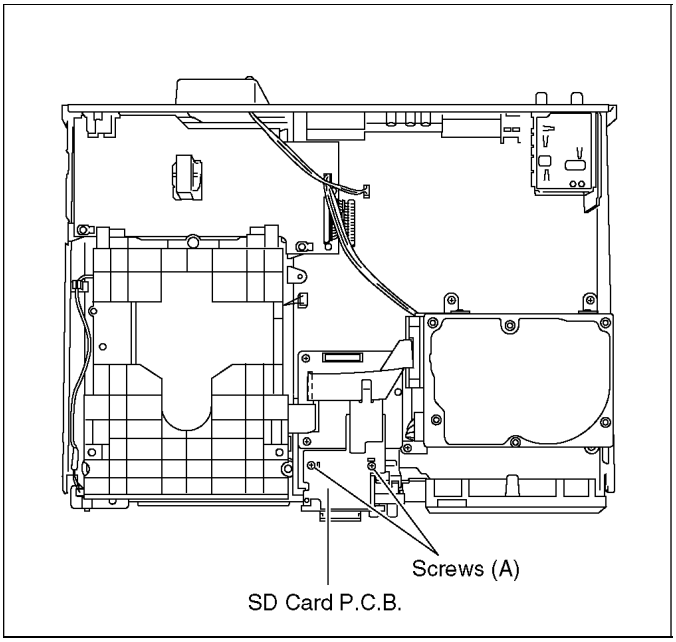
1. Unlock 2 tabs (A) and 3 tabs (B) in this order to remove Front Panel.

   (The tab (A) and (B) should be unlocked at the same time, respectively.)



12.5. SD Card P.C.B.

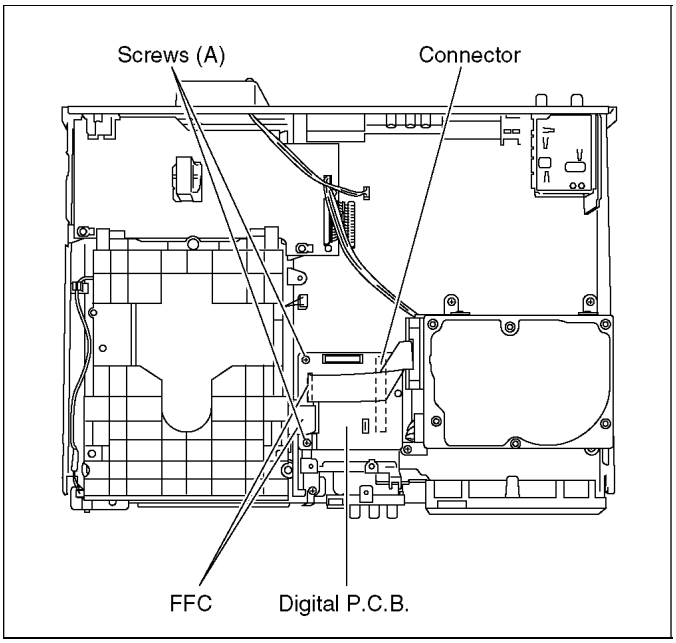
1. Remove 2 Screws (A) to remove SD Card P.C.B.



12.6. Digital P.C.B.

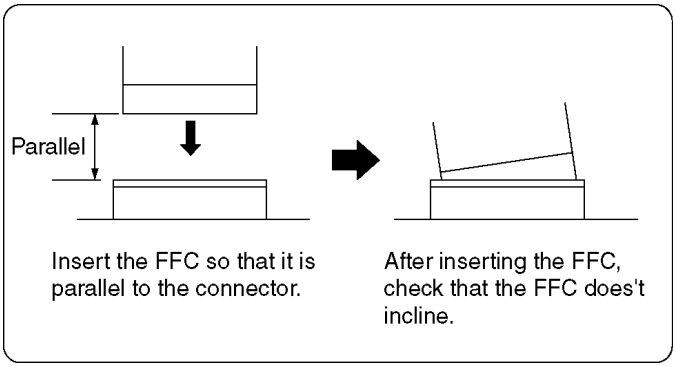
When replacing with Digital P.C.B., "UNFORMAT" indication is displayed and HDD must be formatted.
After that, **programme in the HDD will be lost**.
- How to format the HDD -
1) After "UNFORMAT" is displayed on the FL display, warning message for HDD format is appeared on the TV screen.
2) Select "YES" and press "ENTER" button on the remote controller, HDD will be formatted automatically.

1. Remove 2FFCs and 2 Screws (A).
2. Lift up Digital P.C.B. slightly so to disconnect Connector to remove Digital P.C.B.



CAUTION:

When replacing Digital P.C.B., pay attention as below.



12.7. HDD

When replacing with Digital P.C.B., "UNFORMAT" indication is displayed and HDD must be formatted.

After that, programme in the HDD will be lost.

- How to format the HDD -

1) After "UNFORMAT" is displayed on the FL display, warning message for HDD format is appeared on the TV screen.

2) Select "YES" and press "ENTER" button on the remote controller, HDD will be formatted automatically.

Handling of HDD

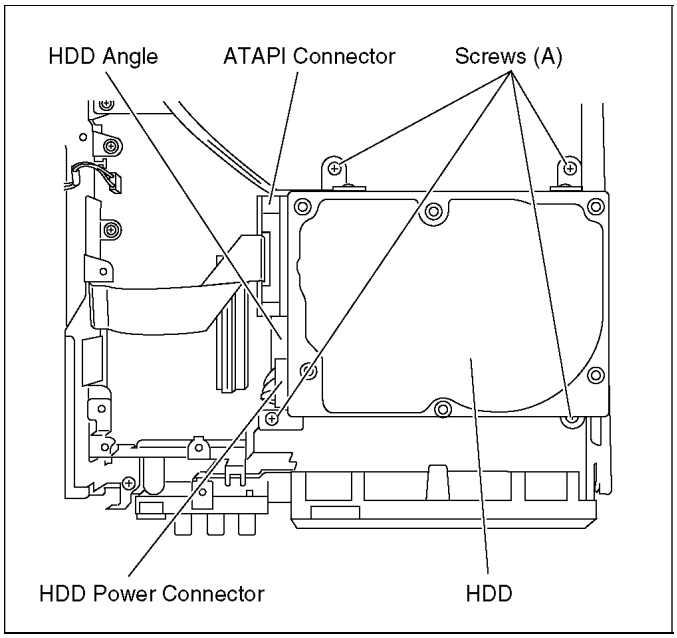
The following precautions should be taken when handling HDD.

1. Never give an impact to HDD. (Even a drop from 1cm height can be a cause of HDD failure.
2. When placing HDD on a workbench, provide a mat on a bench for shock absorption and anti-static purposes.
3. When installing HDD, release it from your hands only after confirming that it is fully set on the chassis.
4. Avoid stacking up HDD.
5. HDD is unstable and easy to fall. Do not stand it on its side face.
6. When handling HDD, hold its side faces to avoid static hazard.
7. Do not place HDD on its wrapping bag after removal. (Prevention of static hazard
8. Use a screwdriver with low impact and anti-static features.

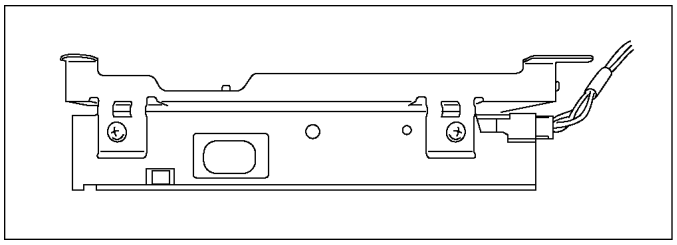
Note:

When replacing HDD, please make the rear jumper slave or cable select configuration.

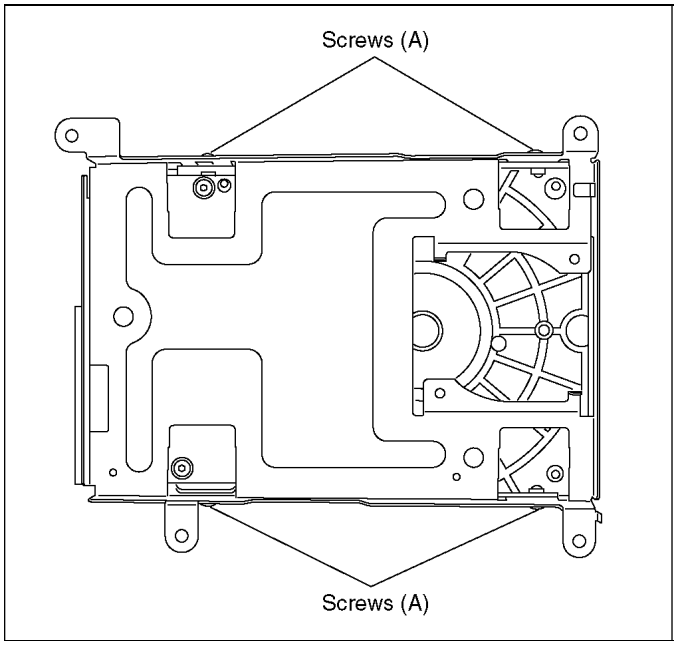
1. Remove ATAPI Connector and HDD Power Connector.
2. Remove 4 Screws (A) to remove HDD Angle with HDD



3. **Put HDD with HDD Angle up and down inversely so as not to give a shock to HDD.**

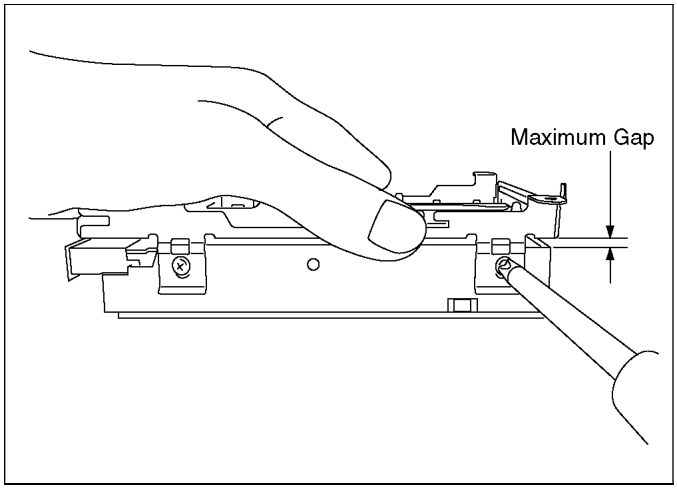


4. Remove 4 screws to remove HDD



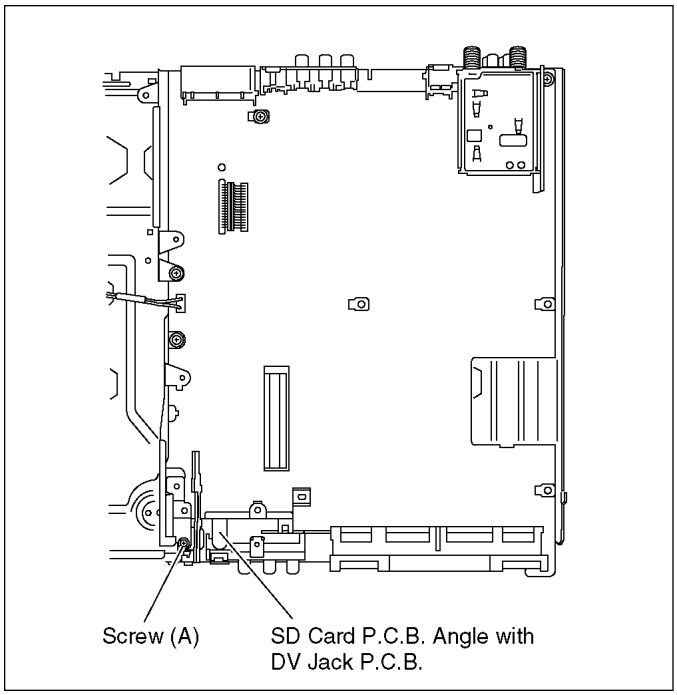
Caution for Attaching HDD

Put HDD up and down inversely so as not to give a shock to HDD, and put HDD Angle on to HDD and tighten 4 screws while lifting HDD Angle so as to keep maximum gap between HDD and HDD Angle.

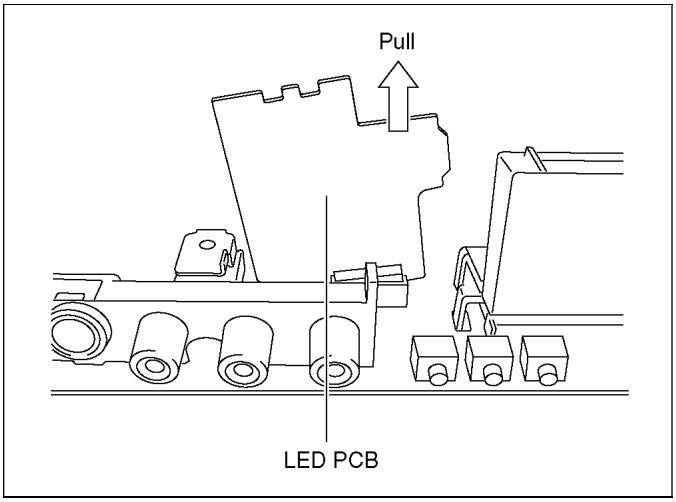


12.8. LED P.C.B. and DV Jack P.C.B.

1. Remove a Screw (A) to remove SD Card P.C.B. Angle with DV Jack P.C.B..

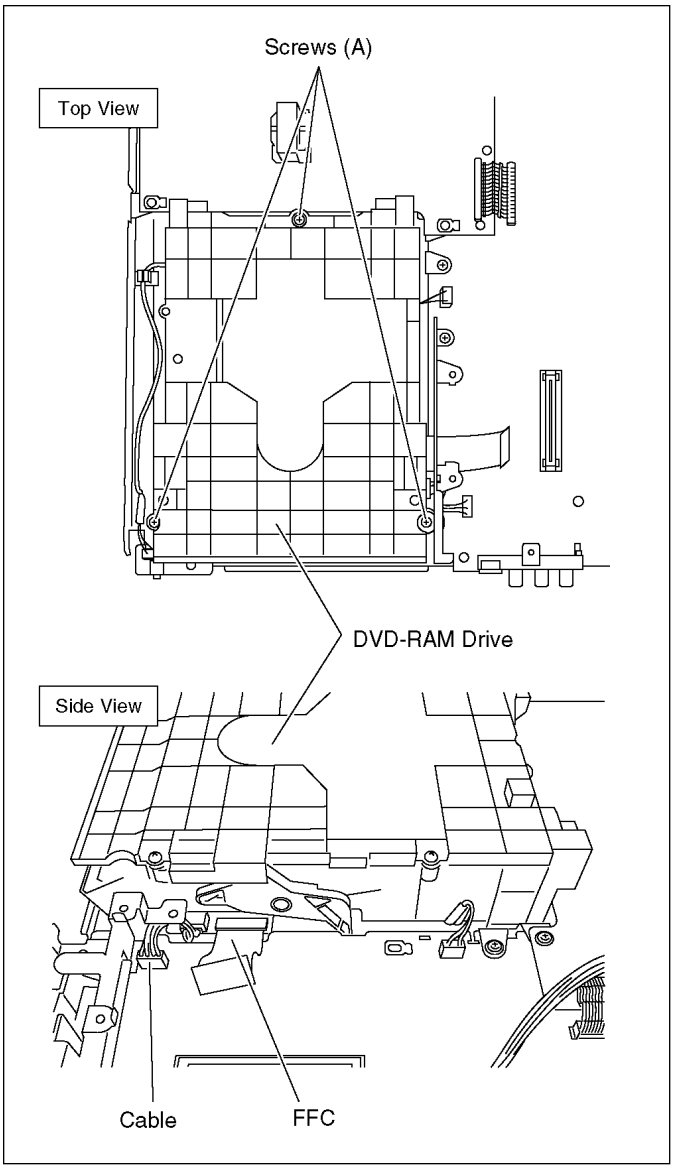


2. At first disconnect the connector on one side as shown below, and pull out LED P.C.B.



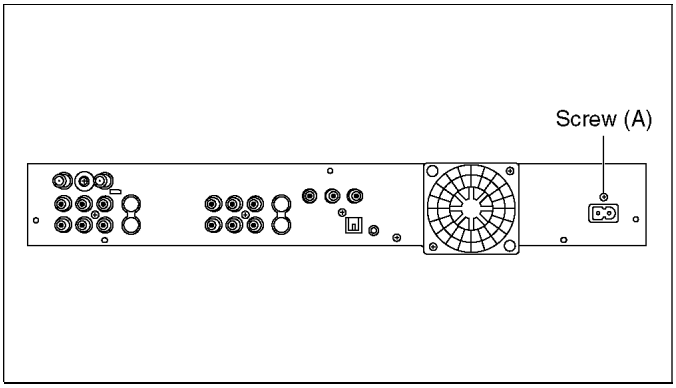
12.9. DVD-RAM Drive

1. Remove 3 Screws (A) to remove DVD-RAM Drive.
2. Lift up DVD-RAM Drive slightly and remove FFC and remove Cable between DVD-RAM Drive and Main P.C.B.

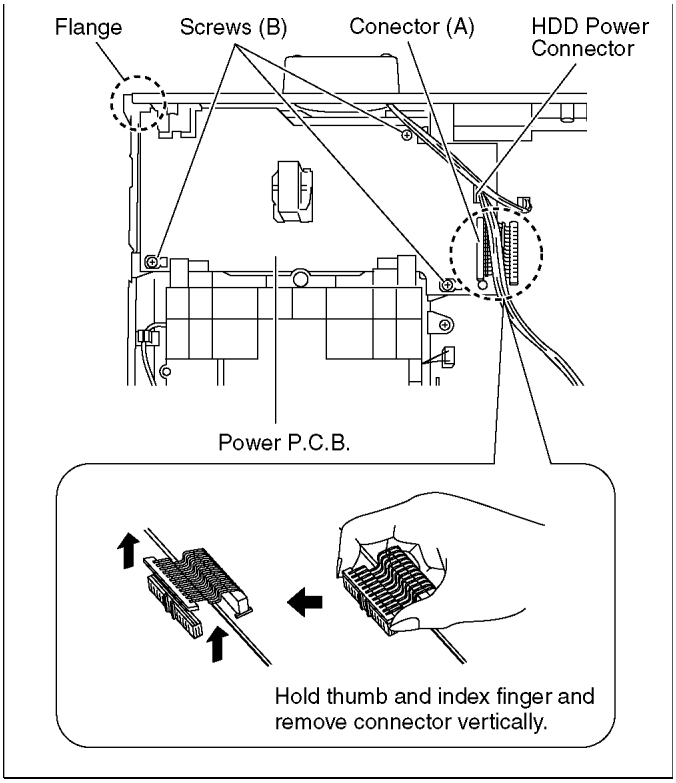


12.10. Power P.C.B.

1. Remove Screw (A).

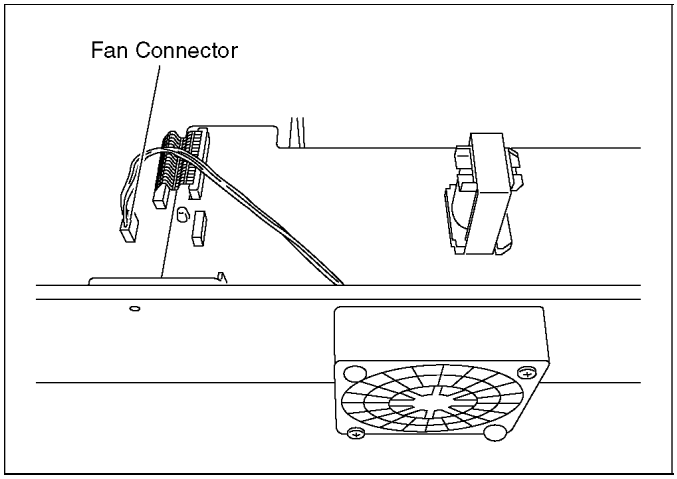


2. Remove 3 Screws (B) and disconnect Connector (A) and HDD Power Connector to remove Power P.C.B.
3. Unlock Power P.C.B. from a flange to remove Power P.C.B..

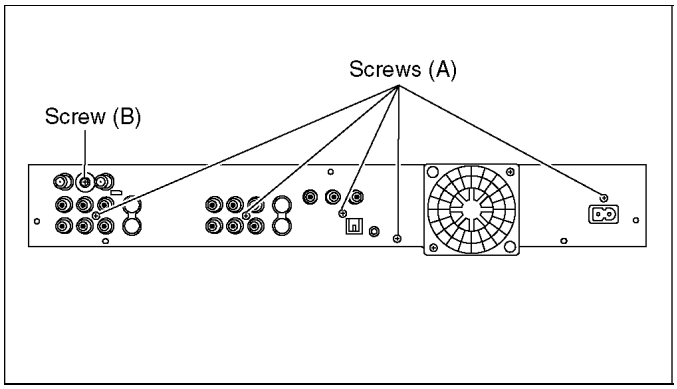


12.11. Rear Panel

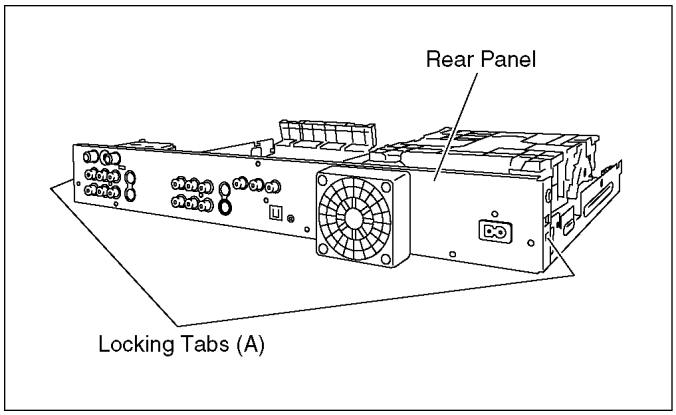
1. Disconnect Fan Connector.



2. Remove 5 Screws (A) and Screw (B).

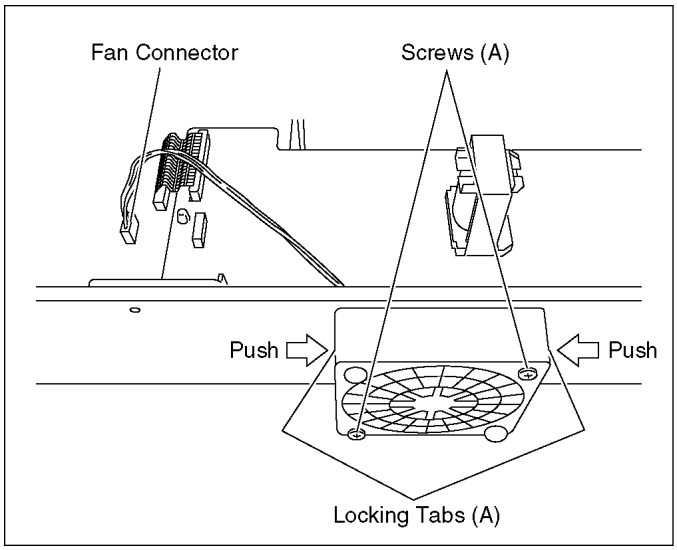


3. Unlock 2 Locking Tabs (A) to remove Rear Panel.



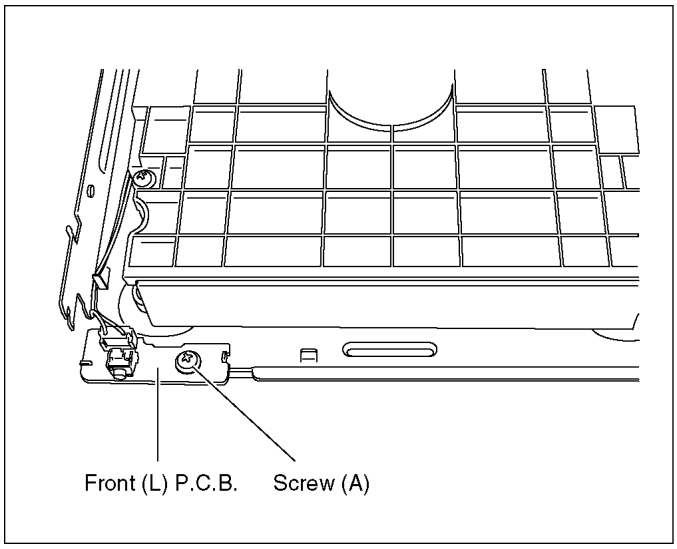
12.11.1. Fan Motor

1. Disconnect Fan Connector and remove 2 Screws (A).
2. Push and unlock 2 locking Tabs (A) to remove Fan Motor.



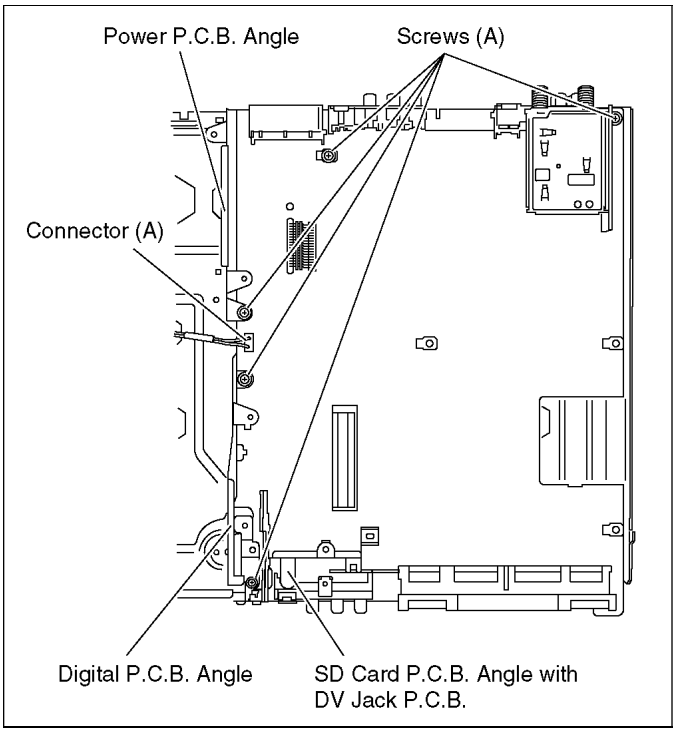
12.12. Front (L) P.C.B.

1. Remove a Screw (A) to remove Front (L) P.C.B.



12.13. Main P.C.B.

1. Disconnect Connector (A) for Front (L) P.C.B.
2. Remove 5 Screws (A),.
3. Remove Power P.C.B. Angle, Digital P.C.B. Angle and SD Card P.C.B. Angle with DV Jack P.C.B. and disconnect Connector (A) to remove Main P.C.B.



13 Service Fixture and Tools

Part Number	Description	Compatibility
RFKZ0125	Extension FFC (Digital P.C.B. - DVD-RAM Drive / 40 Pin)	Same as E50 / E55 series
RFKZ0126	Extension Cable (MainP.C.B. - DVD-RAM Drive/ 4 Pin)	Same as E30 / HS2 series
RFKZ0216	Extension Cable (MainP.C.B. - Power P.C.B. / 23 Pin)	Same as E55 series
RFKZ0260	Extension Cable (MainP.C.B. - Digital P.C.B. / 88 Pin)	Same as ES10 / EH50 series

14 Service Positions

Note:

For description of the disassembling procedure, see the section 12.

14.1. Checking and Repairing of Power P.C.B.

1. Top Case

Remove 2 Screws (A) on side

Remove 3 rear Screws (B) on rear

Remove Top Case

2. Power P.C.B.

Remove 1 Screw for AC Inlet fixing

Remove 3 Screws fixing Power P.C.B.

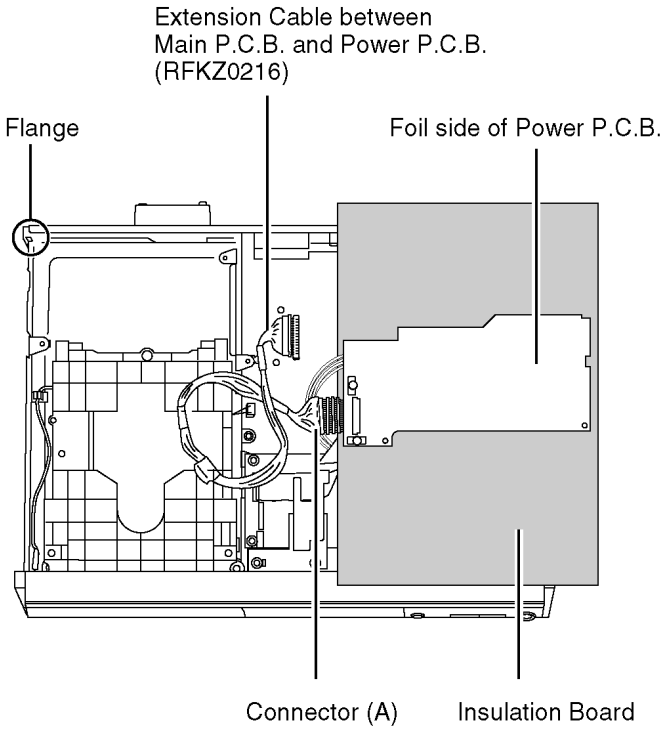
Remove Connector (A) to Main P.C.B.

Unlock Power P.C.B. from a Flange to remove Power P.C.B.

Connect Extension Cable between Main P.C.B. and Power P.C.B. (RFKZ0216).

Put Power P.C.B. on Insulation Board so that it's foil side faces top.

Caution:
Red wire in the extension cable should be connected to (1) pin.
Caution 2:
Original screws should be used.



14.2. Checking and Repairing of Digital P.C.B.

1. Top Case

Remove 2 Screws (A) on side

Remove 3 rear Screws (B) on rear

Remove Top Case

2. Front Panel

Unlock 2 Locking Tabs on side

Unlock 3 Locking Tabs on bottom

Remove Front Panel

3. SD Card P.C.B.

Remove 2 Screws

Remove SD Card P.C.B.

4. Digital P.C.B.

Remove FFC from Digital P.C.B. for RAM

Remove 2 Screws fixing Digital P.C.B.

Lift up Digital P.C.B. Slightly to remove it

5. HDD

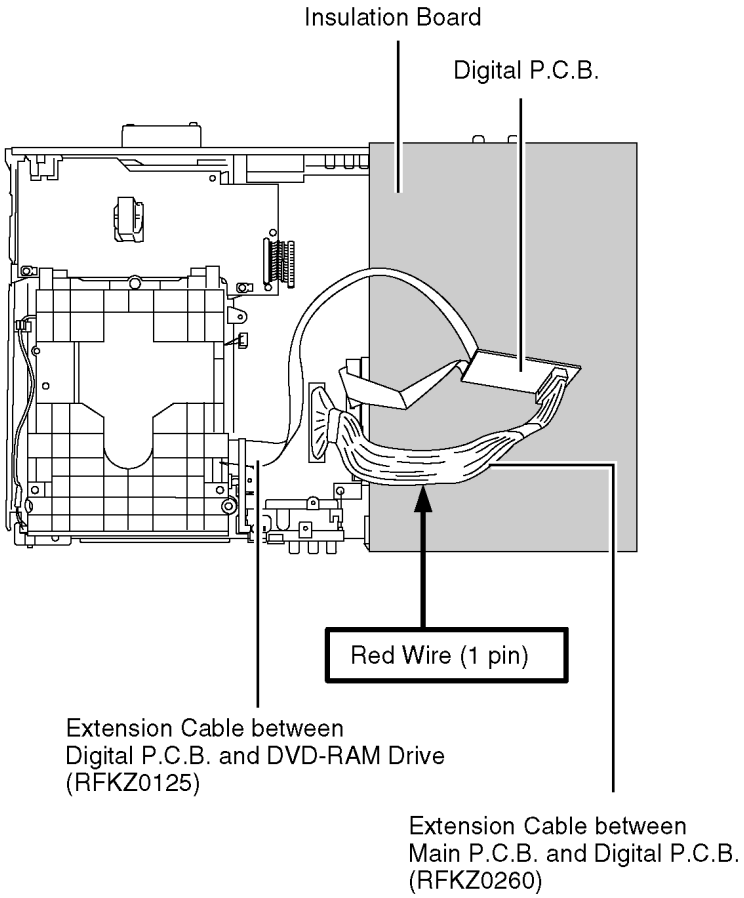
Remove 4 Screws fixing HDD Angle to remove it with HDD

6. SD Card P.C.B. Angle with DV Jack P.C.B.

Remove a Screw to remove SD Card P.C.B. Angle with DV Jack P.C.B.

Remove 3 Screws fixing RAM Drive. While lifting up DVD-RAM Drive slightly, remove FFC and connect Extension Cables between DVD-RAM Drive and Digital P.C.B. (RFKZ0125).
Connect Extension Cable between Main P.C.B. and Digital P.C.B. (RFKZ0260).

Caution 1:
Red wire in the extension cable should be connected to (1) pin.
Caution 2:
Original screws should be used.



14.3. Checking and Repairing of Main P.C.B.

1. Top Case

- Remove 2 Screws (A) on side
- Remove 3 rear Screws (B) on rear
- Remove Top Case

2. Front Panel

- Unlock 2 Locking Tabs on side
- Unlock 3 Locking Tabs on bottom
- Remove Front Panel

3. Fan Motor

- Remove 2 Screws fixing Fan Motor
- Disconnect Fan Cable Connector
- Unlock 2 Locking Tabs to remove Fan Motor

4 . Rear Panel

- Remove 6 Screws (one is for Tuner)
- Unlock 2 Locking Tabs on side
- Remove Rear Panel

5. Power P.C.B.

- Remove 3 Screws fixing Power P.C.B.
- Remove Connector (A) to Main P.C.B.
- Unlock Power P.C.B. from a Flange to remove Power P.C.B.

6. SD Card P.C.B.

- Remove 2 Screws
- Remove SD Card P.C.B.

7. Digital P.C.B.

- Remove FFC from Digital P.C.B.
- Remove 2 Screws fixing Digital P.C.B.
- Lift up Digital P.C.B. slightly to remove it

8. HDD

- Remove 4 Screws fixing HDD Angle to remove it with HDD

9. Digital P.C.B. Angle & SD Card P.C.B. Angle with DV Jack P.C.B.

- Remove 2 Screws to remove Digital P.C.B. Angle and SD Card P.C.B. Angle with DV Jack P.C.B.

10. DVD-RAM Drive

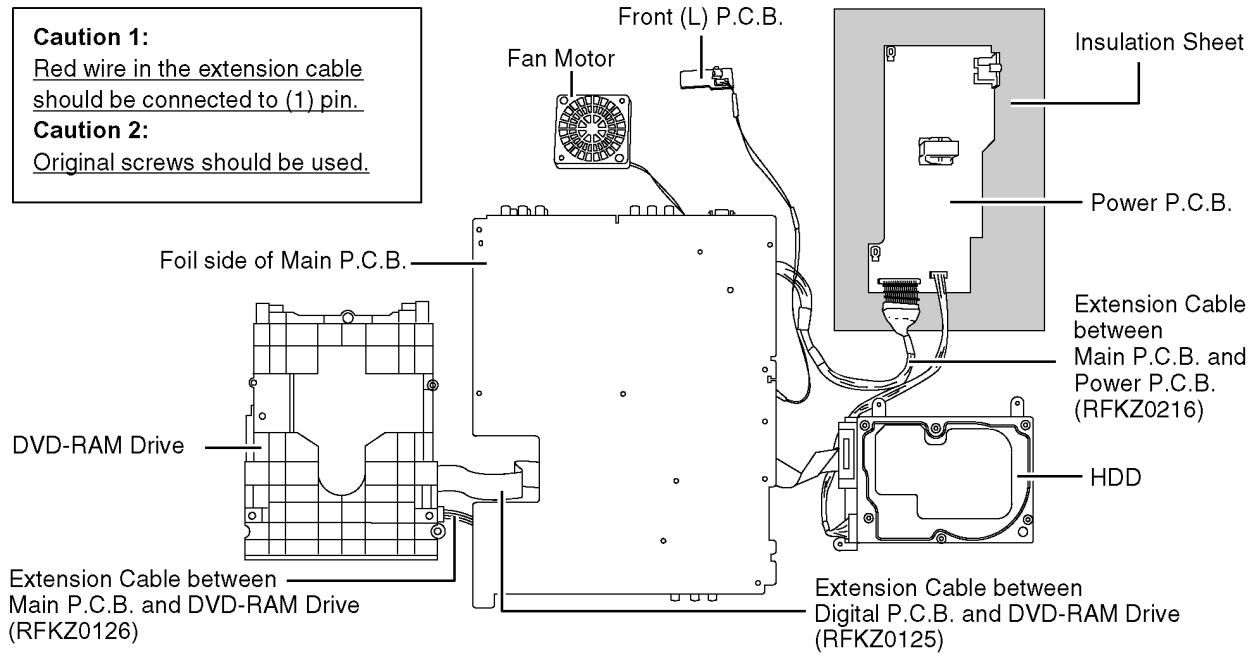
- Remove Cable between RAM Drive and Main P.C.B.
- Remove 3 Screws fixing RAM-Drive
- Lift up DVD-RAM Drive to remove it
- Remove FFC from DVD-RAM Drive

11. Main P.C.B.

- Remove a Screw to remove Front (L) P.C.B.
- Unlock Clamper for Main-Front (L) Cable
- Remove a Screw to remove Power P.C.B. Angle
- Remove 2 Screws to remove Main P.C.B.

Attach Digital P.C.B. on to Main P.C.B.
Connect Fan Connector.
Connect Extension Cables between Main P.C.B. and DVD-RAM Drive (RFKZ0126), between Digital P.C.B. and DVD-RAM Drive (RFKZ0125), and between Main P.C.B. and Power P.C.B. (RFKZ0216)

Caution 1:
Red wire in the extension cable should be connected to (1) pin.
Caution 2:
Original screws should be used.

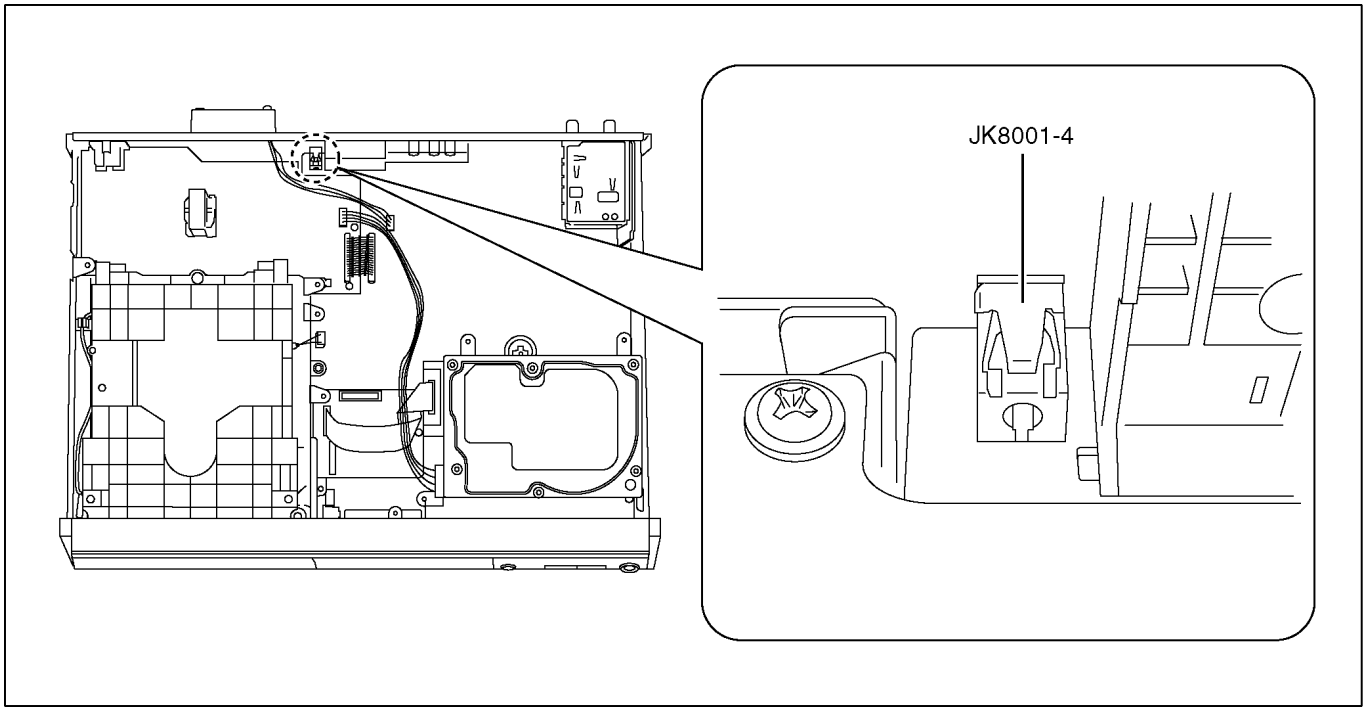

Front (L) P.C.B.
Fan Motor
Insulation Sheet
Power P.C.B.
Foil side of Main P.C.B.
Extension Cable between Main P.C.B. and Power P.C.B. (RFKZ0216)
DVD-RAM Drive
HDD
Extension Cable between Main P.C.B. and DVD-RAM Drive (RFKZ0126)
Extension Cable between Digital P.C.B. and DVD-RAM Drive (RFKZ0125)

14.3.1. Checking IR Circuit (EH60PC Only)

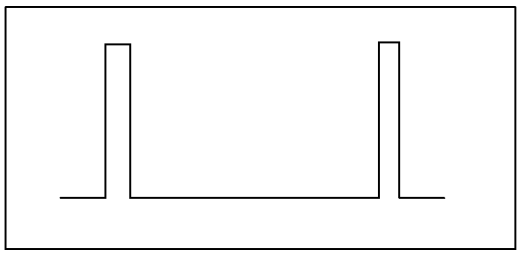
NOTE1: Even if Main P.C.B. is not removed, IR Circuit can be checked.

NOTE2: Prepare the Oscilloscope

1. Remove Top Case.
2. Turn on the power. Then if "Welcome ..." was displayed on the TV monitor, press [ENTER] to advance next stage.
   Then press [ENTER] and proceed to step 6.
   (*After "EPG" has been set up, this indication will not appear.)
3. Press [FUNCTIONS].
4. Select "**TV GUIDE**", and then press [ENTER].
5. Press [ENTER] to advance next stage.
6. Press [ENTER] to advance next stage.
7. Select "**USA**", and then press [ENTER].
8. Input "**0 2 0 3 2**", and then press [ENTER].
9. Select "Yes", and then press [ENTER].
10. Select "Yes", and then press [ENTER].
11. Select "Ch3", and then press [ENTER].
12. Press [ENTER].
13. Select "**Not Listed**", and then press [ENTER].
14. Connect scope to JK8001-4 (CL8021)



15. Press [ENTER], and then if the P.C.B. is "OK", pulse signals of approx. 4.5Vp-p are output twice from JK8001-4 (CL8021).
    (When you want to check again, select "**Test this code again**" and press [ENTER], then Pulse signals are output again.



*Recommended ranges of the Oscilloscope:

V: DC range, and 1V/div.

T: 1msec. /div.

14.4. Checking and Repairing of DVD-RAM Drive

1. Top Case

- Remove 2 Screws (A) on side
- Remove 3 rear Screws (B) on rear
- Remove Top Case

2. Front Panel

- Unlock 2 Locking Tabs on side
- Unlock 3 Locking Tabs on bottom
- Remove Front Panel

3. SD Card P.C.B.

- Remove 2 Screws
- Remove SD Card P.C.B.

4. Digital P.C.B.

- Remove FFC from Digital P.C.B. for DVD-RAM Drive
- Remove 2 Screw fixing Digital P.C.B.
- Lift up Digital P.C.B. slightly to remove it

5. HDD

- Remove 4 Screws fixing HDD Angle to remove it with HDD

6. SD Card P.C.B. Angle with DV Jack P.C.B.

- Remove a Screw to remove SD Card P.C.B. Angle with DV Jack P.C.B.

7. DVD-RAM Drive

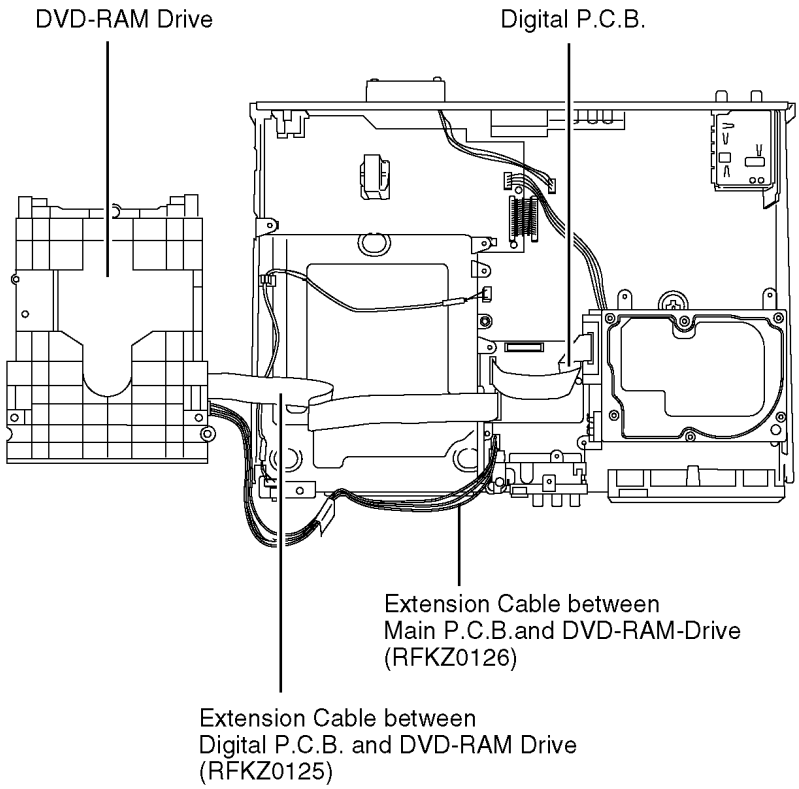
- Remove 3 Screws fixing RAM Drive
- Lift up DVD-RAM Drive slightly and remove FFC from DVD-RAM Drive and remove Cable between DVD-RAM Drive and Main P.C.B.

Attach Digital P.C.B.

Put DVD-RAM Drive on side.

Connect Extension Cables between Main P.C.B. and DVD-RAM Drive, (RFKZ0126), and between Digital P.C.B. and DVD-RAM Drive (RFKZ0125).

Caution :
Original screws should be used.


DVD-RAM Drive
Digital P.C.B.
Extension Cable between Main P.C.B.and DVD-RAM-Drive (RFKZ0126)
Extension Cable between Digital P.C.B. and DVD-RAM Drive (RFKZ0125)

14.5. Checking and Repairing of HDD

1. Top Case

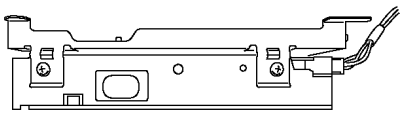
- Remove 2 Screws (A) on side
- Remove 3 Screws (B) on rear
- Remove Top Case

2. HDD

- Disconnect HDD ATAPI Connector
- Remove 4Pin Power Cable from HDD
- Connect HDD ATAPI Connector to Replacement HDD
- Connect 4Pin Power Cable to Replacement HDD
- Put Replacement HDD on Insulation Board

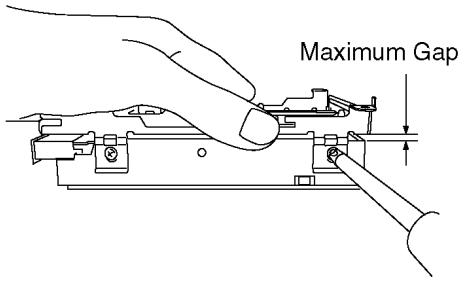
Caution for Removing HDD

Put HDD with HDD Angle up and down inversely and remove 4 screws to remove HDD so as not to give a shock to HDD.

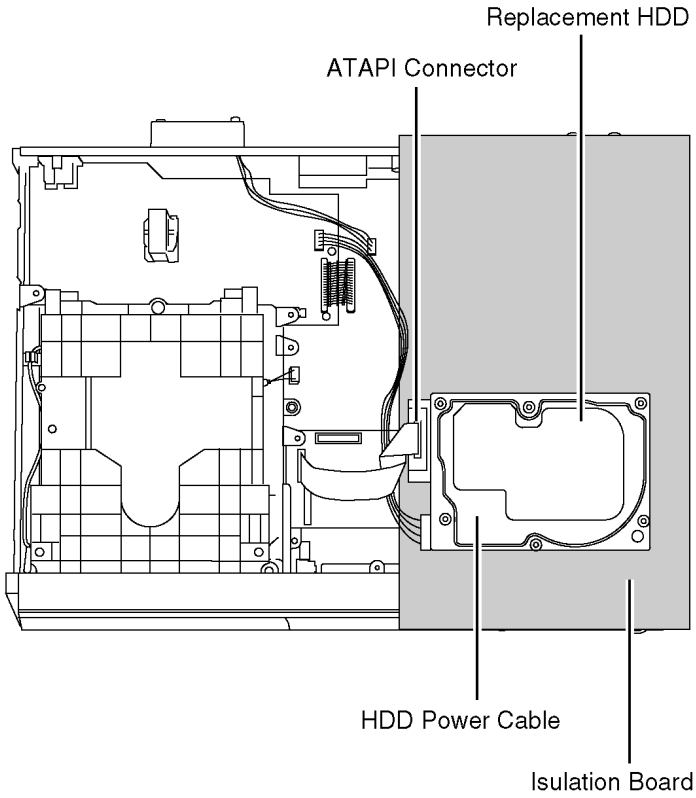


Caution for Attaching HDD

Put HDD up and down inversely, and put HDD Angle on to HDD and tighten 4 screws while lifting HDD Angle so as to keep maximum gap between HDD and HDD Angle.



Caution :
Original screws should be used.



15 Caution after replacing parts

15.1. After replacing the RAM Drive with new one

After replacing RAM drive unit, TEST mode is not necessary. Please confirm operation for RAM drive

15.2. When the unit does not operate normally after replacing the Timer Microprocessor or Main P.C.B.

When the unit does not operate normally after replacing the Timer Microprocessor or Main P.C.B. with new one, reset Timer Microprocessor.

Step	Operation	Descriptions
1	While power is OFF, short TW7501 pin (RESET) and the GND momentarily.	"RESET (L)" is transmitted to the XRESET of Timer Microprocessor (IC7505-11 pin), then the unit operates normally.

16 Standard Inspection Specifications after Making Repairs

After making repairs, we recommend performing the following inspection, to check normal operation.

No.	Procedure	Item to Check
1	Turn on the power, and confirm items pointed out.	Items pointed out should reappear.
2	Insert RAM disc.	The Panasonic RAM disc should be recognized.
3	Enter the EE (TU IN / AV IN - AV OUT) mode.	No abnormality should be seen in the picture, sound or operation.
4	Perform auto recording and playback for one minute using the RAM disc.	No abnormality should be seen in the picture, sound or operation. *Panasonic DVD-RAM disc should be used when recording and playback.
5	Model with the HDD: Perform auto recording and playback for one minute using the HDD	No abnormality should be seen in the picture, sound or operation.
6	If a problem is caused by a VCD, DVD-R, DVD-Video, Audio-CD, or MP3, playback the test disc.	No abnormality should be seen in the picture, sound or operation.
7	Models with SD Card Slot or DV Input Jack: In case of that the trouble is caused by SD card or DV terminal.	Models with SD Card Slot or DV Input Jack; 1) SD card: Check to be able to display and copy the picture. 2) DV terminal: Check to be able to record from DVC.
8	After checking and making repairs, upgrade the firmware to the latest version.	Make sure that [FIRM_SUCCESS] appears in the FL displays. *[UNFORMAT] display means the unit is already updated to newest same version. Then version up is not necessary.
9	Transfer [9][9] in the service mode setting, and initialize the service settings (return various settings and error information to their default values. The laser time is not included in this initialization).	Make sure that [CLR SERV] appears in the FL display. After checking it, turn the power off.
10	When replacing of RAM drive, transfer [9] [5] in the service mode setting to delete Laser used time.	Make sure that [CLR LASER] appears in the FL display. After that, turn power off.

Use the following checklist to establish the judgement criteria for the picture and sound.

Item	Contents	Check	Item	Contents	Check
Picture	Block noise		Sound	Distorted sound	
	Crosscut noise			Noise (static, background noise, etc.)	
	Dot noise			The sound level is too low.	
	Picture disruption			The sound level is too high.	
	Not bright enough			The sound level changes.	
	Too bright				
	Flickering colour				
	Colour fading				

17 Voltage and Waveform Chart

Note)

Circuit voltage and waveform described herein shall be regarded as reference information when probing defect point, because it may differ from an actual measuring value due to difference of Measuring instrument and its measuring condition and product itself.

17.1. Power P.C.B.

Ref No.	IC1150						IC1200				IC1400									
MODE	1	2	3	4	5		1	2	3		1	2	3	4	5	6	7	8		
REC	2.3	1.7	0	12.0	-540		10.9	2.5	0		12.2	0	1.3	4.2	0	0.9	0.8	1.1		
PLAY	2.3	1.7	0	12.0	-540		10.9	2.5	0		12.2	0	1.3	4.2	0	0.9	0.8	1.1		
STOP	2.3	1.7	0	12.0	-550		10.9	2.5	0		12.2	0	1.3	4.2	0	0.9	0.8	1.1		
Ref No.	IC1401									IC1501										
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5						
REC	12.1	4.5	1.3	1.3	1.2	0	8.6	12.1		-	0	0	5.0	5.1						
PLAY	12.1	4.5	1.3	1.3	1.2	0	8.6	12.1		-	0	0	5.0	5.1						
STOP	12.1	4.5	1.3	1.3	1.2	0	8.6	12.1		-	0	0	5.0	5.1						
Ref No.	IC1601									IC1701										
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			
REC	12.1	4.5	1.2	1.2	0.8	0	6.6	12.2		12.2	4.5	1.3	1.2	1.2	0	9.1	12.2			
PLAY	12.1	4.5	1.2	1.2	0.8	0	6.6	12.2		12.2	4.5	1.3	1.2	1.2	0	9.1	12.2			
STOP	12.1	4.5	1.2	1.2	0.8	0	6.6	12.2		12.2	4.5	1.3	1.2	1.2	0	9.1	12.2			
Ref No.	Q1200					Q1270									Q1400					
MODE	1	2	3	4		1	2	3	4	5	6	7	8		1	2	3	4	5	6
REC	11.9	10.9	0	1.7		12.2	12.2	12.2	6.1	12.2	12.2	12.2	12.2		3.4	3.4	8.6	12.1	3.4	3.4
PLAY	11.9	10.9	0	1.7		12.2	12.2	12.2	6.1	12.2	12.2	12.2	12.2		3.4	3.4	8.6	12.1	3.4	3.4
STOP	11.9	10.9	0	1.7		12.2	12.2	12.2	6.1	12.2	12.2	12.2	12.2		3.3	3.3	8.6	12.1	3.3	3.3
Ref No.	Q1600						Q1700													
MODE	1	2	3	4	5	6		1	2	3	4	5	6							
REC	6.3	6.3	6.6	12.2	6.3	6.3		1.3	1.3	9.1	12.2	1.3	1.3							
PLAY	6.3	6.3	6.6	12.2	6.3	6.3		1.3	1.3	9.1	12.2	1.3	1.3							
STOP	6.3	6.3	6.6	12.2	6.3	6.3		1.2	1.2	9.1	12.2	1.2	1.2							
Ref No.	QR1301				QR1302				QR1303				QR1304				QR1800			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
REC	0	0	3.3		0	0.1	4.9		0	4.5	0.1		0	0	4.9		11.7	0	0	
PLAY	0	0	3.3		0	0.1	4.9		0	4.5	0.1		0	0	4.9		11.7	0	0	
STOP	0	0	3.3		0	0.1	4.9		0	4.5	0.1		0	0	4.9		11.7	0	0	
Ref No.	QR1801																			
MODE	E	C	B																	
REC	0	4.5	0																	
PLAY	0	4.5	0																	
STOP	0	4.5	0																	

17.2. Main P.C.B.

Ref No.	IC1501									IC1502										
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			
REC	5.0	-	0	3.4	4.8	-	-	6.2		3.3	-	0	2.0	4.8	-	-	3.7			
PLAY	5.0	-	0	3.4	4.8	-	-	6.2		3.3	-	0	2.0	4.8	-	-	3.7			
STOP	5.0	-	0	3.4	4.8	-	-	6.2		3.3	-	0	2.0	4.8	-	-	3.7			
Ref No.	IC1504						IC1510													
MODE	1	2	3	4	5		1	2	3	4	5	6	7	8						
REC	3.7	3.1	3.3	1.3	0		5.0	-	0	3.4	4.9	-	-	6.1						
PLAY	3.7	3.1	3.3	1.3	0		5.0	-	0	3.4	4.9	-	-	6.1						
STOP	3.7	3.1	3.3	1.3	0		5.0	-	0	3.4	4.9	-	-	6.1						
Ref No.	IC1511									IC1512										
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			
REC	5.2	-	0	3.6	6.2	-	-	6.1		5.0	-	0	3.4	4.9	-	-	6.2			
PLAY	5.2	-	0	3.6	6.2	-	-	6.1		5.0	-	0	3.4	4.9	-	-	6.2			
STOP	5.2	-	0	3.6	6.2	-	-	6.2		5.0	-	0	3.4	4.9	-	-	6.2			
Ref No.	IC3001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	1.4	0	2.5	5.0	1.8	4.9	1.4	4.7	0.1	2.7	0	1.4	4.9	1.4	0	0.1	2.7	0	1.4	4.9
PLAY	1.4	0	2.5	5.0	1.8	4.9	1.4	4.7	0.1	2.7	0	1.4	4.9	1.4	0	0.1	2.7	0	1.4	4.9
STOP	1.4	0	2.5	5.0	1.8	1.6	1.4	4.7	0.1	2.7	0	1.4	4.9	1.4	0	0.1	2.7	0	1.4	4.9
Ref No.	IC3001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	1.4	0	0.1	2.7	4.9	1.7	1.8	1.9	1.9	2.2	0	2.2	2.2	2.2	2.2	1.7	1.7	0	1.8	5.0
PLAY	1.4	0	0.1	2.7	4.9	1.7	1.8	1.9	1.9	2.2	0	2.2	2.2	2.2	2.2	1.7	1.7	0	1.8	5.0
STOP	1.4	0	0.1	2.7	4.9	1.8	1.8	1.9	1.9	2.2	0	2.2	2.2	2.2	2.2	1.7	1.7	0	1.8	5.0
Ref No.	IC3001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	2.8	0	2.8	4.9	2.8	2.8	1.8	4.7	2.8	0	2.8	4.9	2.8	2.9	1.1	0	5.1	5.1	5.1	0.1
PLAY	2.8	0	2.8	4.9	2.8	2.8	1.8	4.7	2.8	0	2.8	4.9	2.8	2.9	1.1	0	5.1	5.1	5.1	0.1
STOP	2.8	0	2.8	4.9	2.8	2.8	1.8	4.7	2.8	0	2.8	4.9	2.8	2.9	1.1	0	5.1	5.1	5.1	0.1

Ref No.	IC3001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
REC	0	0.8	0.8	5.0	1.3	0	1.8	0	2.0	0	0.3	5.0	0.3	0	0.4	0	0	5.0	0	0
PLAY	0	0.8	0.8	5.0	1.3	0	1.8	0	2.0	0	0.3	5.0	0.3	0	0.4	0	0	5.0	0	0
STOP	0	0.8	0.8	5.0	1.3	0	1.8	0	2.0	0	0.2	5.0	0.3	0	0.2	0	0	5.0	0	0
Ref No.	IC4001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	-	4.5	4.5	0.4	0.4	4.5	4.5	3.4	4.5	4.5	4.5	4.5	4.5	4.5	0	4.5	-	4.5	-	5.1
PLAY	-	4.5	4.5	0.4	0.4	4.5	4.5	3.4	4.5	4.5	4.5	4.5	4.5	4.5	0	4.5	-	4.5	-	5.1
STOP	-	4.5	4.5	0.3	0.3	4.5	4.5	3.4	4.5	4.5	4.5	4.5	4.5	4.5	0	4.5	-	4.5	-	5.1
Ref No.	IC4001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32								
REC	5.1	0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	9.0	4.5	4.5								
PLAY	5.1	0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	9.0	4.5	4.5								
STOP	5.1	0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	9.0	4.5	4.5								
Ref No.	IC4004						IC4005						IC7404							
MODE	1	2	3	4	5		1	2	3	4	5		1	2	3	4	5	6	7	8
REC	1.3	0	4.8	6.2	5.1		4.8	0	1.3	9.0	12.9		3.3	1.5	1.9	0	2.8	1.5	3.3	5.0
PLAY	1.3	0	4.8	6.2	5.1		4.8	0	1.3	9.0	12.9		3.3	1.5	1.9	0	2.8	1.5	3.3	5.0
STOP	1.3	0	4.8	6.2	5.1		4.8	0	1.3	9.0	12.9		3.3	1.5	1.9	0	2.8	1.5	3.3	5.0
Ref No.	IC7501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	5.0	3.0	4.4	0.9	0	2.1	2.1	4.8	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-24.2	4.8	-24.2	-17.0
PLAY	5.0	3.0	4.4	0.9	0	2.1	2.1	4.8	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-24.2	4.8	-24.2	-17.0
STOP	4.9	3.0	4.4	0.8	0	2.1	2.1	4.8	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	4.7	-24.2	-20.0
Ref No.	IC7501																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	-17.0	-24.2	-27.8	-27.8	-24.2	-27.8	-27.8	-13.3	-27.8	-17.0	-17.0	-24.2	-17.0	-24.2	-13.4	-17.0	-24.2	-13.4	-13.4	-24.2
PLAY	-17.0	-24.2	-27.8	-27.8	-24.2	-27.8	-27.8	-13.3	-27.8	-17.0	-17.0	-24.2	-17.0	-24.2	-13.4	-17.0	-24.2	-13.4	-13.4	-24.2
STOP	-17.0	-24.2	-24.2	-27.8	-24.2	-27.8	-27.8	-20.6	-20.6	-20.6	-20.6	-20.6	-13.4	-20.6	-13.4	-24.2	-17.0	-17.0	-24.2	-27.9
Ref No.	IC7501																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	-24.2	-27.9	-24.2	-24.2	-24.2	-13.5	-24.2	-27.9	-24.2	-27.9	-27.9	-27.9	-27.9	-27.9	-27.9	-24.3	-24.3	-24.3	-24.3	-24.3
PLAY	-24.2	-27.9	-24.2	-24.2	-24.2	-13.5	-24.2	-27.9	-24.2	-27.9	-27.9	-27.9	-27.9	-27.9	-27.9	-24.3	-24.3	-24.3	-24.3	-24.3
STOP	-27.9	-27.9	-24.2	-24.2	-24.2	-17.1	-13.5	-27.9	-24.3	-27.9	-27.9	-27.9	-27.9	-27.9	-27.9	-24.3	-24.3	-24.3	-24.3	-24.3
Ref No.	IC7501																			
MODE	61	62	63	64																
REC	-24.3	-24.3	-24.3	-28.1																
PLAY	-24.3	-24.3	-24.3	-28.1																
STOP	-24.3	-24.3	-24.3	-28.1																
Ref No.	IC7502						IC7503						IC7504							
MODE	1	2	3	4	5		1	2	3	4	5		1	2	3	4	5	6	7	8
REC	4.9	5.2	0	-	-		2.2	3.3	0	-	-		5.8	1.3	1.3	0	0	0	10.9	12.1
PLAY	4.9	5.2	0	-	-		2.2	3.3	0	-	-		5.8	1.3	1.3	0	0	0	10.9	12.1
STOP	4.9	5.2	0	-	-		2.2	3.3	0	-	-		5.8	1.3	1.3	0	0	0	10.9	12.1
Ref No.	IC7505																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	0	4.9	0	4.0	4.0	4.4	0	0	0.5	0.6	4.7	1.3	0	2.1	3.3	4.9	3.3	3.2	3.2	3.3
PLAY	0	4.9	0	4.0	4.0	4.4	0	0	0.5	0.6	4.7	1.3	0	2.1	3.3	4.9	3.3	3.2	3.2	3.3
STOP	0	4.9	0	4.0	4.0	4.4	0	0	0.5	0.6	4.7	1.3	0	2.1	3.3	4.9	3.3	3.2	3.2	3.3
Ref No.	IC7505																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	0	0	1.3	0	0	0	0	0	0	0	0.9	1.6	0	4.9	2.6	0	0	3.3	3.3	3.3
PLAY	0	0	1.3	0	0	0	0	0	0	0	0.9	1.6	0	4.9	2.6	0	0	3.3	3.3	3.3
STOP	0	0	1.3	0	0	0	0	0	0	0	0.9	1.6	0	4.9	2.6	0	0	3.3	3.3	3.3
Ref No.	IC7505																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	0	0.1	0	3.3	0	0	0	0	4.9	4.9	0	0	4.9	5.0	0	0	0	0	0	0
PLAY	0	0.1	0	3.3	0	0	0	0	4.9	4.9	0	0	4.9	5.0	0	0	0	0	0	0
STOP	0	0.1	3.2	3.3	0	0	4.9	4.9	4.9	4.9	4.9	0	4.9	5.0	0	0	0	0	0	0
Ref No.	IC7505																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
REC	0	0	4.9	0	5.0	5.0	0	4.9	4.9	0	0	0	4.9	0	0	0	0	0	0	4.9
PLAY	0	0	4.9	0	5.0	5.0	0	4.9	4.9	0	0	0	4.9	0	0	0	0	0	0	4.9
STOP	0	0	4.9	0	4.9	5.0	0	4.9	4.9	0	0	0	4.9	0	0	0	0	0	0	4.9
Ref No.	IC7505																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
REC	0	0	0	0	0	0	4.9	0	0	0	0	0	4.9	3.0	0	0	0	0	4.7	0
PLAY	0	0	0	0	0	0	4.9	0	0	0	0	0	4.9	3.0	0	0	0	0	4.7	0
STOP	0	0	0	0	0	0	4.9	0	0	0	0	0	4.9	3.0	0	0	0	0	4.7	0
Ref No.	IC7505																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116				
REC	4.9	4.2	0	4.9	4.9	0	0	0	1.8	1.3	0	4.9	1.8	0	0	0.3				
PLAY	4.9	4.2	0	4.9	4.9	0	0	0	1.8	1.3	0	4.9	1.8	0	0	0.3				
STOP	4.9	4.9	0	4.9	4.9	4.9	0	0	1.8	1.3	0	4.9	1.8	0	0	0.5				
Ref No.	IC8001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	0	0	0	0	5.0	5.0	0	5.0	2.2	2.4	0	0	0	0	0	0	0	0	0	0
PLAY	0	0	0	0	5.0	5.0	0	5.0	2.2	2.4	0	0	0	0	0	0	0	0	0	0
STOP	0	0	0	0	5.0	5.0	0	5.0	2.2	0	0	0	0	0	5.0	0	0	0	0	0
Ref No.	IC8001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32								
REC	0	0	0	0	0	4.2	4.2	4.5	0	0	0	5.0								
PLAY	0	0	0	0	0	4.2	4.2	4.5	0	0	0	5.0								
STOP	0	0	0	0	0	4.2	4.2	4.5	0	0	0	5.0								

Ref No.	IC8002																			
MODE	1	2	3	4	5															
REC	0	0	0	5.0	5.0															
PLAY	0	0	0	5.0	5.0															
STOP	0	0	0	5.0	5.0															
Ref No.	Q4001				Q4002				Q4003				Q4004				Q4005			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
REC	5.2	-0.2	5.2		0	0	-0.2		0	0	-0.2		0	0	-0.4		0	0	-0.3	
PLAY	5.2	-0.2	5.2		0	0	-0.2		0	0	-0.2		0	0	-0.4		0	0	-0.3	
STOP	5.2	-0.2	5.2		0	0	-0.3		0	0	-0.3		0	0	-0.3		0	0	-0.2	
Ref No.	Q7503				Q7504				Q7506				Q7507				Q7508			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
REC	2.4	0	1.8		1.8	5.0	1.6		-19.1	-19.1	-18.4		0	29.5	0		0	0	-0.3	
PLAY	2.4	0	1.8		1.8	5.0	1.6		-19.1	-19.1	-18.4		0	29.5	0		0	0	-0.3	
STOP	2.4	0	1.8		1.8	5.0	1.6		-19.3	-19.3	-18.5		0	34.4	0		0	0	-0.3	
Ref No.	Q7509				Q8001				Q8002				Q8003				Q8004			
MODE	1	2	3		E	C	B		E	C	B		E	C	B		E	C	B	
REC	5.7	12.1	5.1		4.4	4.5	4.6		4.0	4.2	4.3		4.9	5.0	5.0		0	5.0	0	
PLAY	5.7	12.1	5.1		4.4	4.5	4.6		4.0	4.2	4.3		4.9	5.0	5.0		0	5.0	0	
STOP	6.8	12.1	6.1		4.4	4.6	4.6		4.0	4.2	4.3		4.9	5.0	5.0		0	5.0	0	
Ref No.	Q8005																			
MODE	1	2	3																	
REC	0	0	0																	
PLAY	0	0	0																	
STOP	0	0	0																	
Ref No.	QR4001				QR4002				QR4003				QR4004				QR7502			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
REC	0	0	4.9		0	0	2.4		0	5.2	0		0	5.2	0		4.9	4.9	0	
PLAY	0	0	4.9		0	0	2.4		0	5.2	0		0	5.2	0		4.9	4.9	0	
STOP	0	0	4.9		0	0	2.3		0	5.2	0		0	5.2	0		4.9	4.9	0	
Ref No.	QR7503																			
MODE	E	C	B																	
REC	0	0	2.2																	
PLAY	0	0	2.2																	
STOP	0	0	2.2																	

17.3. Tuner P.C.B.

Ref No.	IC7801																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	-	0.7	2.8	0.8	2.4	2.4	4.5	-	2.5	2.5	-	-	-	2.7	2.3	-	0	0	-	-
PLAY	-	0.7	2.8	0.8	2.4	2.4	4.5	-	2.5	2.5	-	-	-	2.7	2.3	-	0	0	-	-
STOP	-	0.7	2.9	0.8	2.4	0	4.4	-	0	0	-	-	-	0	0	-	0	0	-	-
Ref No.	IC7801																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32								
REC	0	0	2.2	5.1	0	0	5.1	0	2.2	2.2	-	2.3								
PLAY	0	0	2.2	5.1	0	0	5.1	0	2.2	2.2	-	2.3								
STOP	0	0	0	0	0	0	0	0	0	0	-	0								
Ref No.	Q7801																			
MODE	E	C	B																	
REC	0	0	0																	
PLAY	0	0	0																	
STOP	0	0	0																	

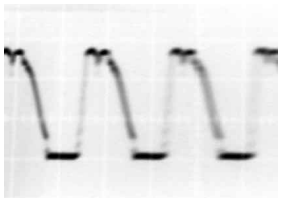
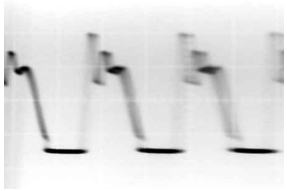
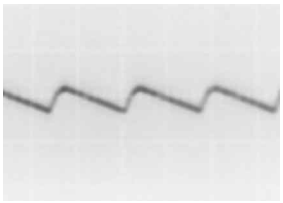
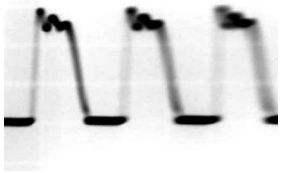
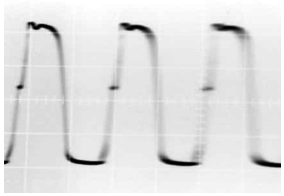
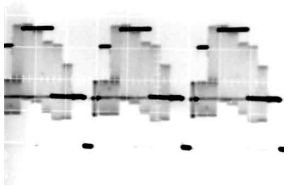
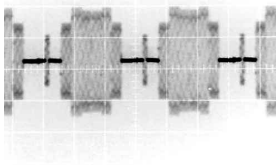
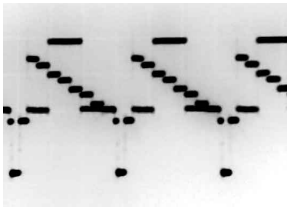
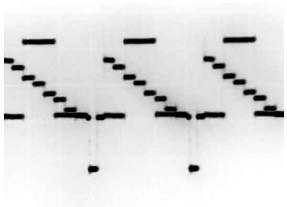
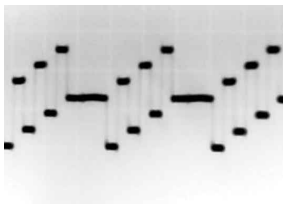
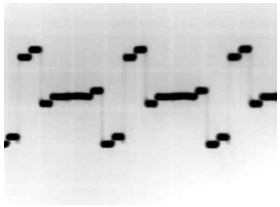
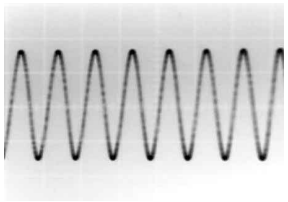
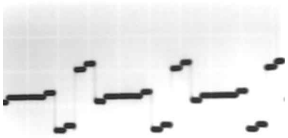
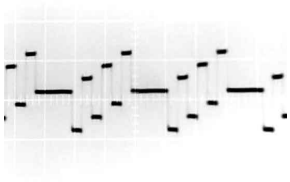
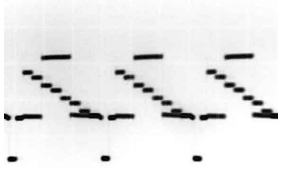
17.4. LED P.C.B.

Ref No.	Q7101				Q7102				Q7103				Q7104							
MODE	E	C	B		E	C	B		E	C	B		E	C	B					
REC	0	3.7	0		0	0.1	0.7		0	5.2	0		0	5.1	0					
PLAY	0	3.7	0		0	0.1	0.7		0	5.2	0		0	5.1	0					
STOP	0	3.7	0		0	0.1	0.7		0	5.2	0		0	5.1	0					

17.5. P9001 Connector

Ref No.	P9001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	-	-	-	1.0	-	3.3	3.3	3.3	0.2	3.1	-	3.3	-	3.3	2.3	-	5.1	-	-	-
PLAY	-	-	-	1.0	-	3.3	3.3	3.3	0.2	3.1	-	3.3	-	3.3	2.3	-	5.1	-	-	-
STOP	-	-	-	1.0	-	3.3	3.3	3.2	0.2	3.1	-	3.2	-	3.3	2.3	-	5.1	-	-	-
Ref No.	P9001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	-	-	-	-	0	-	0	3.3	2.5	-	2.5	-	0	0	0	1.7	0	3.3	2.5	-
PLAY	-	-	-	-	0	-	0	3.3	2.5	-	2.5	-	0	0	0	1.7	0	3.3	2.5	-
STOP	-	-	-	-	0	-	0	3.3	2.5	-	2.5	-	0	0	0	1.7	0	3.3	2.5	-
Ref No.	P9001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	2.5	3.3	0	0	0	0	1.1	5.0	0	-	1.5	5.0	0	-	1.0	-	0	-	1.1	-
PLAY	2.5	3.3	0	0	0	0	1.1	5.0	0	-	1.5	5.0	0	-	1.0	-	0	-	1.1	-
STOP	2.5	3.3	0	0	0	0	1.1	5.0	0	-	1.5	5.0	0	-	1.0	-	0	-	1.1	-
Ref No.	P9001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
REC	0	-	1.0	-	0	-	0	3.3	0	3.3	0	3.3	0	3.3	0	1.5	0	0.3	0	-
PLAY	0	-	1.0	-	0	-	0	3.3	0	3.3	0	3.3	0	3.3	0	1.5	0	0.3	0	-
STOP	0	-	1.0	-	0	-	0	3.3	0	3.3	0	3.3	0	3.3	0	1.5	0	0.3	0	-
Ref No.	P9001																			
MODE	81	82	83	84	85	86	87	88												
REC	0	1.5	1.5	1.5	0	1.5	2.1	1.5												
PLAY	0	1.5	1.5	1.5	0	1.5	2.1	1.5												
STOP	0	1.5	1.5	1.5	0	1.5	2.1	1.5												

17.6. Waveform Chart

 T1150-2 STOP 30Vp-p (5 μ sec.div)	 T1150-4 STOP 300Vp-p (5 μ sec.div)	 T1150-6 STOP 20Vp-p (5m sec.div)	 T1150-10,11 STOP 30Vp-p (5 μ sec.div)
 IC1150-1 STOP 8.0Vp-p (5 μ sec.div)	 IC1150-2 STOP 0.5Vp-p (5 μ sec.div)	 P7401-83 REC/PLAY 1.0Vp-p (20 μ sec.div)	 P7401-51 REC/PLAY 0.8Vp-p (20 μ sec.div)
 P7401-47 REC/PLAY 1.0Vp-p (20 μ sec.div)	 P7401-59 REC/PLAY 1.0Vp-p (20 μ sec.div)	 P7401-63 REC/PLAY 0.6Vp-p (20 μ sec.div)	 P7401-55 REC/PLAY 0.6Vp-p (20 μ sec.div)
 P7401-29,31 REC/PLAY 0.8Vp-p (1m sec.div)	 JK3903-18 REC/PLAY 1.1Vp-p (20 μ sec.div)	 JK3903-19 REC/PLAY 1.1Vp-p (20 μ sec.div)	 JK3903-20 REC/PLAY 2.0Vp-p (20 μ sec.div)

18 Abbreviations

INITIAL/LOGO		ABBREVIATIONS
A	A0~UP	ADDRESS
	ACLK	AUDIO CLOCK
	AD0~UP	ADDRESS BUS
	ADATA	AUDIO PES PACKET DATA
	ALE	ADDRESS LATCH ENABLE
	AMUTE	AUDIO MUTE
	AREQ	AUDIO PES PACKET REQUEST
	ARF	AUDIO RF
	ASI	SERVO AMP INVERTED INPUT
	ASO	SERVO AMP OUTPUT
	ASYNC	AUDIO WORD DISTINCTION SYNC
B	BCK	BIT CLOCK (PCM)
	BCKIN	BIT CLOCK INPUT
	BDO	BLACK DROP OUT
	BLKCK	SUB CODE BLOCK CLOCK
	BOTTOM	CAP. FOR BOTTOM HOLD
	BYP	BYPATH
	BYTCK	BYTE CLOCK
C	CAV	CONSTANT ANGULAR VELOCITY
	CBDO	CAP. BLACK DROP OUT
	CD	COMPACT DISC
	CDSCK	CD SERIAL DATA CLOCK
	CDSRDATA	CD SERIAL DATA
	CDRF	CD RF (EFM) SIGNAL
	CDV	COMPACT DISC-VIDEO
	CHNDATA	CHANNEL DATA
	CKSL	SYSTEM CLOCK SELECT
	CLV	CONSTANT LINEAR VELOCITY
	COFTR	CAP. OFF TRACK
	CPA	CPU ADDRESS
	CPCS	CPU CHIP SELECT
	CPDT	CPU DATA
	CPUADR	CPU ADDRESS LATCH
	CPUADT	CPU ADDRESS DATA BUS
	CPUIRQ	CPU INTERRUPT REQUEST
	CPRD	CPU READ ENABLE
	CPWR	CPU WRITE ENABLE
	CS	CHIP SELECT
	CSYNCIN	COMPOSITE SYNC IN
	CSYNCOUT	COMPOSITE SYNC OUT
D	DACCK	D/A CONVERTER CLOCK
	DEEMP	DEEMPHASIS BIT ON/OFF
	DEMPH	DEEMPHASIS SWITCHING
	DIG0~UP	FL DIGIT OUTPUT
	DIN	DATA INPUT
	DMSRCK	DM SERIAL DATA READ CLOCK
	DMUTE	DIGITAL MUTE CONTROL
	DO	DROP OUT
	DOUT0~UP	DATA OUTPUT
	DRF	DATA SLICE RF (BIAS)
	DRPOUT	DROP OUT SIGNAL
	DREQ	DATA REQUEST
	DRESP	DATA RESPONSE
	DSC	DIGITAL SERVO CONTROLLER
	DSLF	DATA SLICE LOOP FILTER
	DVD	DIGITAL VIDEO DISC

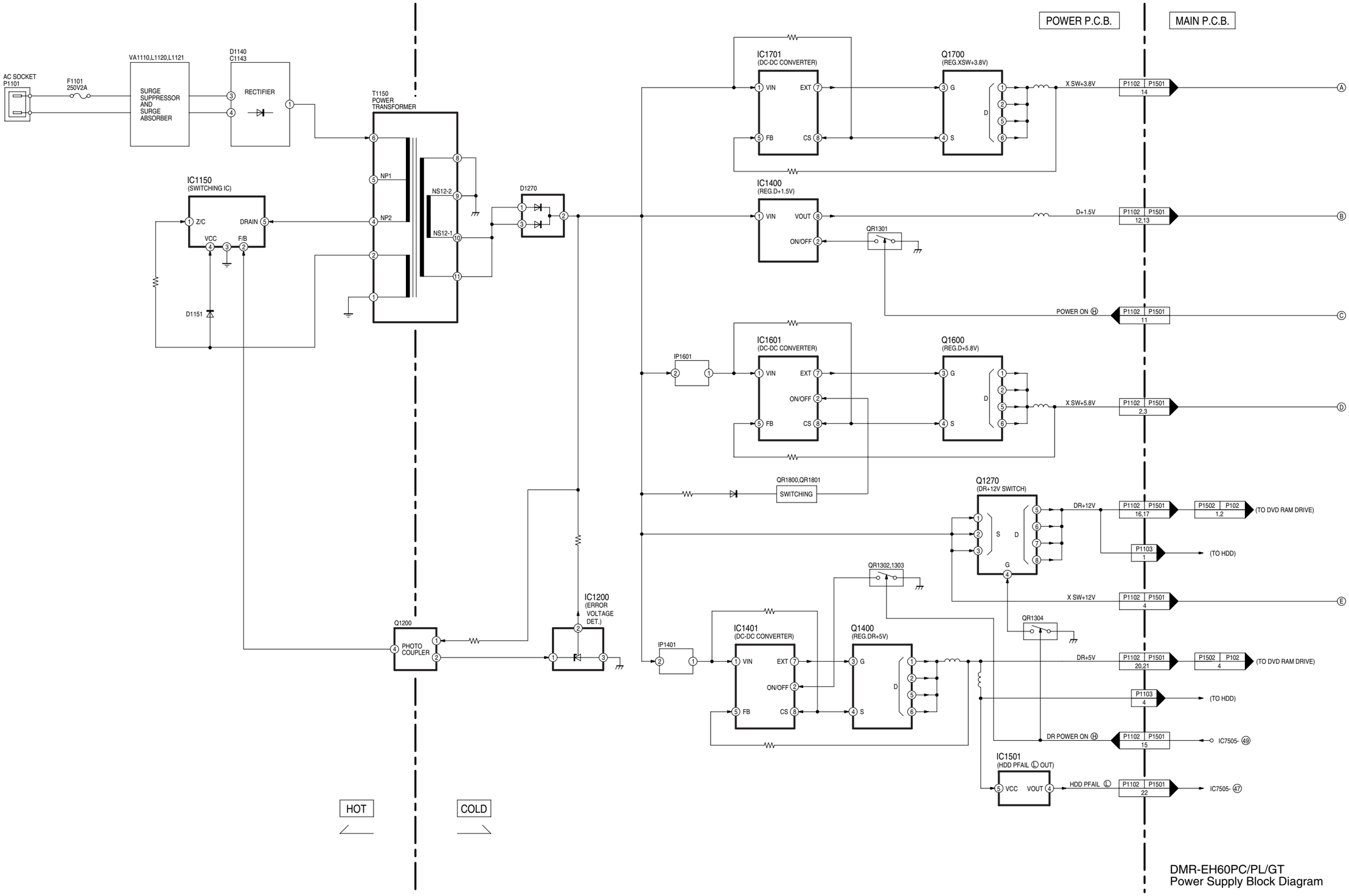
INITIAL/LOGO		ABBREVIATIONS
E	EC	ERROR TORQUE CONTROL
	ECR	ERROR TORQUE CONTROL REFERENCE
	ENCSEL	ENCODER SELECT
	ETMCLK	EXTERNAL M CLOCK (81MHz/40.5MHz)
	ETSCLK	EXTERNAL S CLOCK (54MHz)
F	FBAL	FOCUS BALANCE
	FCLK	FRAME CLOCK
	FE	FOCUS ERROR
	FFI	FOCUS ERROR AMP INVERTED INPUT
	FEO	FOCUS ERROR AMP OUTPUT
	FG	FREQUENCY GENERATOR
	FSC	FREQUENCY SUB CARRIER
	FSCK	FS (384 OVER SAMPLING) CLOCK
G	GND	COMMON GROUNDING (EARTH)
H	HA0~UP	HOST ADDRESS
	HD0~UP	HOST DATA
	HINT	HOST INTERRUPT
	HRXW	HOST READ/WRITE
I	IECOUT	IEC958 FORMAT DATA OUTPUT
	IPFRAG	INTERPOLATION FLAG
	IREF	I (CURRENT) REFERENCE
	ISEL	INTERFACE MODE SELECT
L	LDON	LASER DIODE CONTROL
	LPC	LASER POWER CONTROL
	LRCK	L CH/R CH DISTINCTION CLOCK
M	MA0~UP	MEMORY ADDRESS
	MCK	MEMORY CLOCK
	MCKI	MEMORY CLOCK INPUT
	MCLK	MEMORY SERIAL COMMAND CLOCK
	MDATA	MEMORY SERIAL COMMAND DATA
	MDQ0~UP	MEMORY DATA INPUT/OUTPUT
	MDQM	MEMORY DATA I/O MASK
	MLD	MEMORY SERIAL COMMAND LOAD
	MPEG	MOVING PICTURE EXPERTS GROUP
O	ODC	OPTICAL DISC CONTROLLER
	OFTR	OFF TRACKING
	OSCI	OSCILLATOR INPUT
	OSCO	OSCILLATOR OUTPUT
	OSD	ON SCREEN DISPLAY
P	P1~UP	PORT
	PCD	CD TRACKING PHASE DIFFERENCE
	PCK	PLL CLOCK
	PDVD	DVD TRACKING PHASE DIFFERENCE
	PEAK	CAP. FOR PEAK HOLD
	PLLCLK	CHANNEL PLL CLOCK
	PLLOK	PLL LOCK
	PWMCTL	PWM OUTPUT CONTROL
	PWMDA	PULSE WAVE MOTOR DRIVE A
	PWMOA, B	PULSE WAVE MOTOR OUT A, B

INITIAL/LOGO		ABBREVIATIONS
R	RE	READ ENABLE
	RFENV	RF ENVELOPE
	RFO	RF PHASE DIFFERENCE OUTPUT
	RS	(CD-ROM) REGISTER SELECT
	RSEL	RF POLARITY SELECT
	RST	RESET
	RSV	RESERVE
S	SBI0, 1	SERIAL DATA INPUT
	SBO0	SERIAL DATA OUTPUT
	SBT0, 1	SERIAL CLOCK
	SCK	SERIAL DATA CLOCK
	SCKR	AUDIO SERIAL CLOCK RECEIVER
	SCL	SERIAL CLOCK
	SCLK	SERIAL CLOCK
	SDA	SERIAL DATA
	SEG0~UP	FL SEGMENT OUTPUT
	SELCLK	SELECT CLOCK
	SEN	SERIAL PORT ENABLE
	SIN1, 2	SERIAL DATA IN
	SOUT1, 2	SERIAL DATA OUT
	SPDI	SERIAL PORT DATA INPUT
	SPDO	SERIAL PORT DATA OUTPUT
	SPEN	SERIAL PORT R/W ENABLE
	SPRCLK	SERIAL PORT READ CLOCK
	SPWCLK	SERIAL PORT WRITE CLOCK
	SQCK	SUB CODE Q CLOCK
	SQCX	SUB CODE Q DATA READ CLOCK
	SRDATA	SERIAL DATA
	SRMADR	SRAM ADDRESS BUS
	SRMDT0~7	SRAM DATA BUS 0~7
	SS	START/STOP
	STAT	STATUS
	STCLK	STREAM DATA CLOCK
	STD0~UP	STREAM DATA
	STENABLE	STREAM DATA INPUT ENABLE
	STSEL	STREAM DATA POLARITY SELECT
	STVALID	STREAM DATA VALIDITY
	SUBC	SUB CODE SERIAL
	SBCK	SUB CODE CLOCK
	SUBQ	SUB CODE Q DATA
	SYSCLK	SYSTEM CLOCK
T	TE	TRACKING ERROR
	TIBAL	BALANCE CONTROL
	TID	BALANCE OUTPUT 1
	TIN	BALANCE INPUT
	TIP	BALANCE INPUT
	TIS	BALANCE OUTPUT 2
	TPSN	OP AMP INPUT
	TPSO	OP AMP OUTPUT
	TPSP	OP AMP INVERTED INPUT
	TRCRS	TRACK CROSS SIGNAL
	TRON	TRACKING ON
	TRSON	TRAVERSE SERVO ON

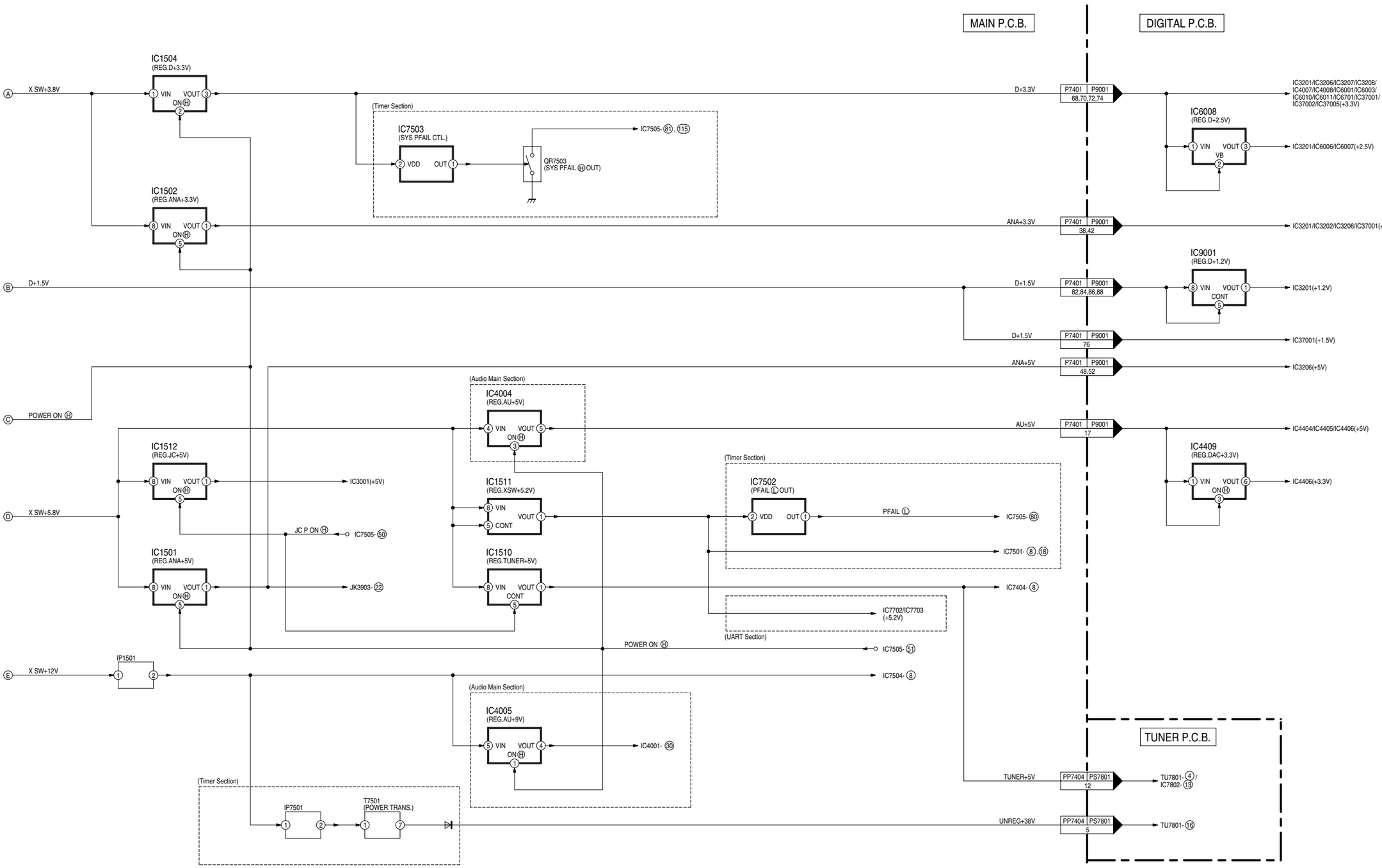
INITIAL/LOGO		ABBREVIATIONS
V	VBLANK	V BLANKING
	VCC	COLLECTOR POWER SUPPLY VOLTAGE
	VCDCONT	VIDEO CD CONTROL (TRACKING BALANCE)
	VDD	DRAIN POWER SUPPLY VOLTAGE
	VFB	VIDEO FEED BACK
	VREF	VOLTAGE REFERENCE
	VSS	SOURCE POWER SUPPLY VOLTAGE
W	WAIT	BUS CYCLE WAIT
	WDCK	WORD CLOCK
	WEH	WRITE ENABLE HIGH
	WSR	WORD SELECT RECEIVER
X	X	X´ TAL
	XALE	X ADDRESS LATCH ENABLE
	XAREQ	X AUDIO DATA REQUEST
	XCDROM	X CD ROM CHIP SELECT
	XCS	X CHIP SELECT
	XCSYNC	X COMPOSITE SYNC
	XDS	X DATA STROBE
	XHSYNCO	X HORIZONTAL SYNC OUTPUT
	XHINT	XH INTERRUPT REQUEST
	XI	X´ TAL OSCILLATOR INPUT
	XINT	X INTERRUPT
	XMW	X MEMORY WRITE ENABLE
	XO	X´ TAL OSCILLATOR OUTPUT
	XRE	X READ ENABLE
	XSRMCE	X SRAM CHIP ENABLE
	XSRMOE	X SRAM OUTPUT ENABLE
	XSRMWE	X SRAM WRITE ENABLE
	XVCS	X V-DEC CHIP SELECT
	XVDS	X V-DEC CONTROL BUS STROBE
	XVSYNCO	X VERTICAL SYNC OUTPUT

19 Block Diagram

19.1. Power Supply Block Diagram



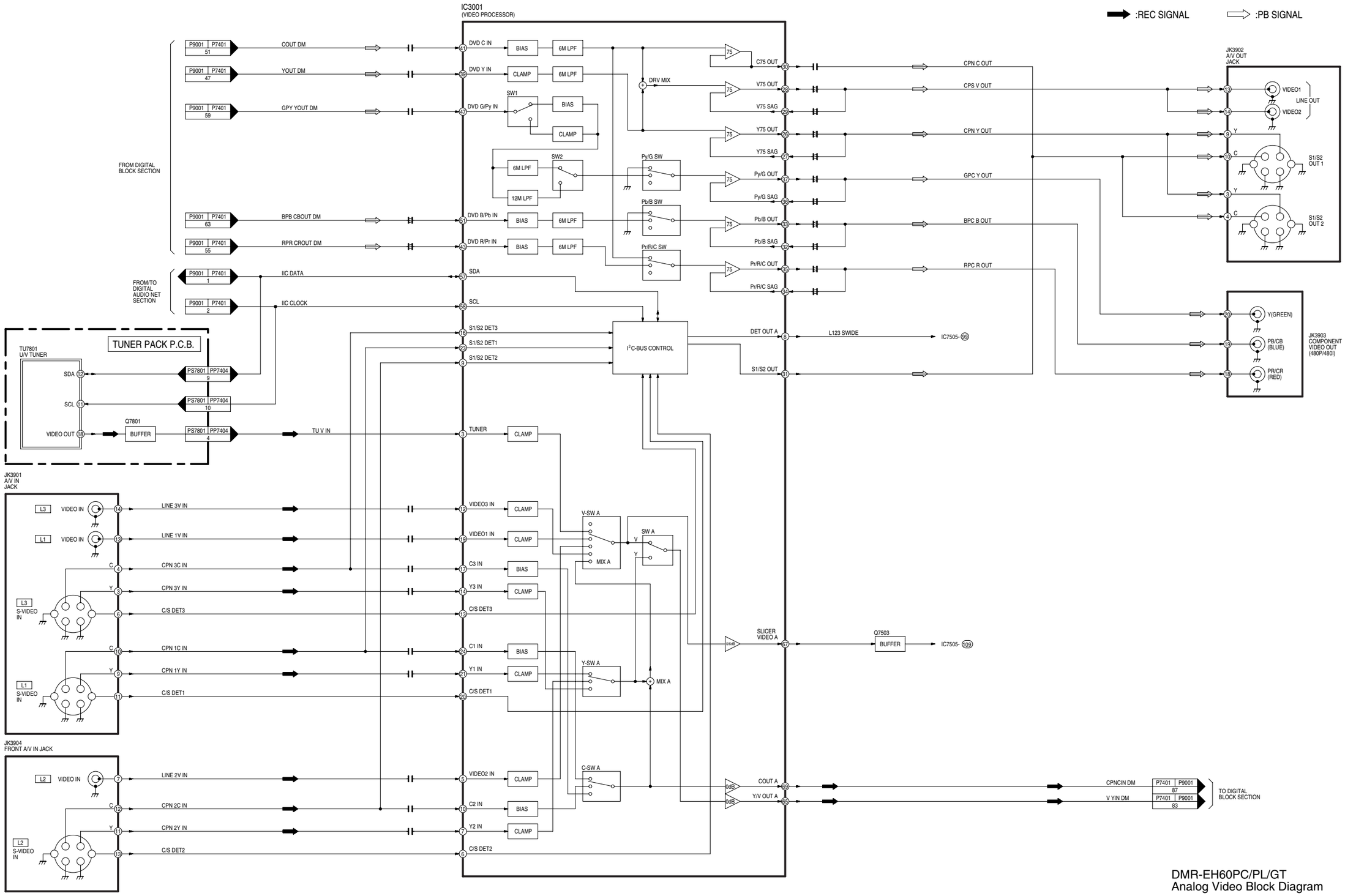
DMR-EH60PC/PL/GT
Power Supply Block Diagram



DMR-EH60PC/PL/GT
Power Supply Block Diagram

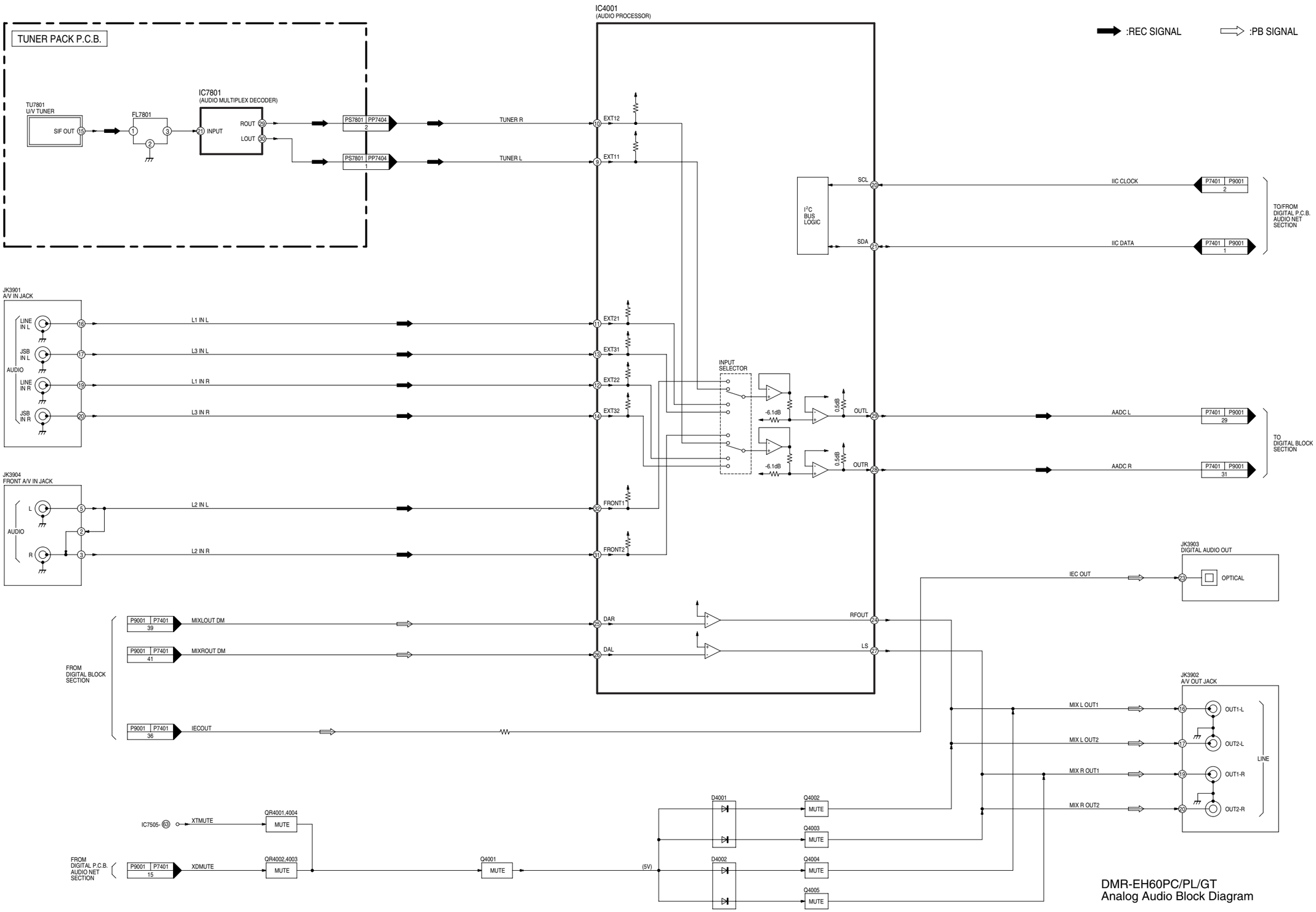
DMR-EH60PC/PL/GT
Power Supply Block Diagram

19.2. Analog Video Block Diagram



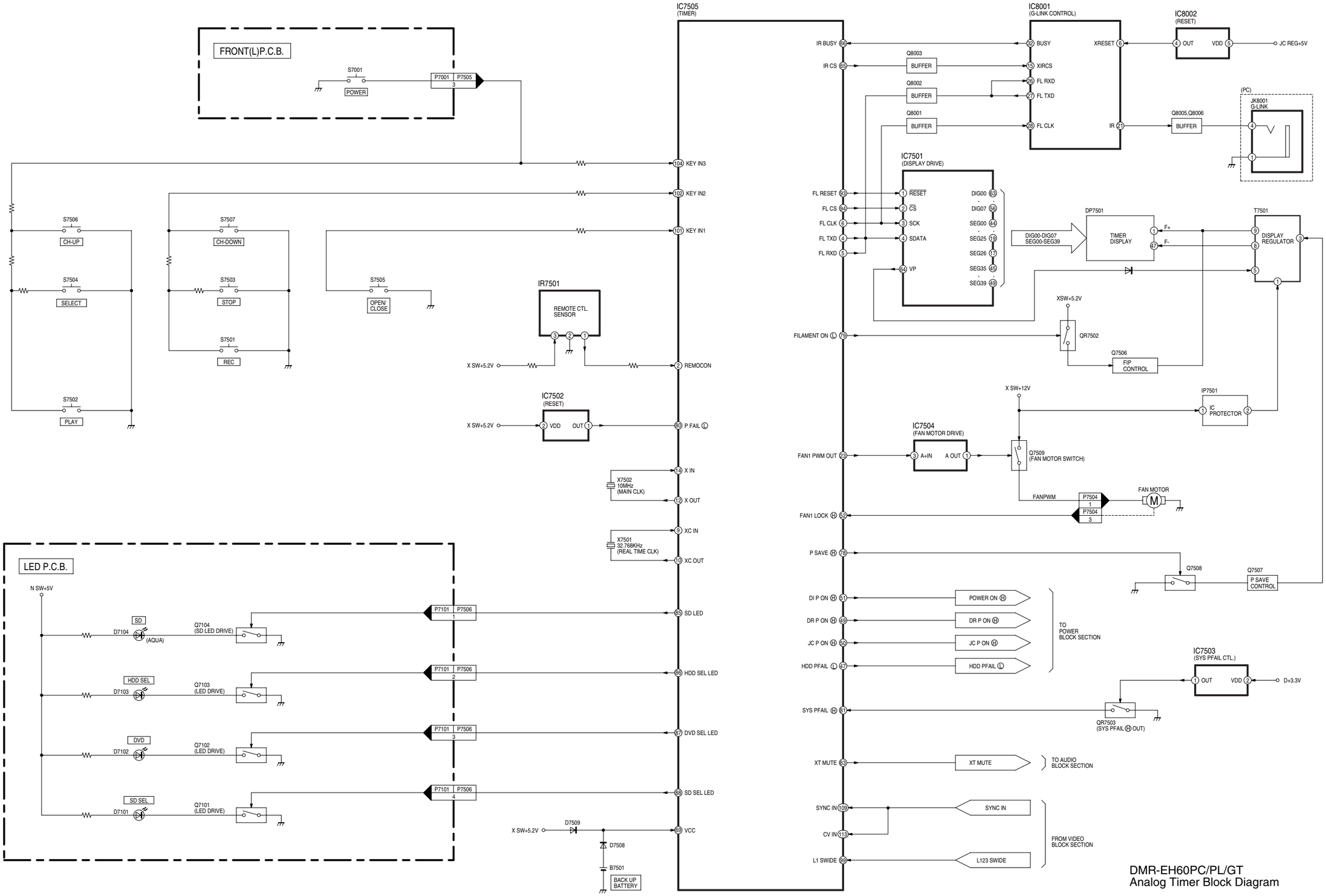
DMR-EH60PC/PL/GT
Analog Video Block Diagram

19.3. Analog Audio Block Diagram



DMR-EH60PC/PL/GT
Analog Audio Block Diagram

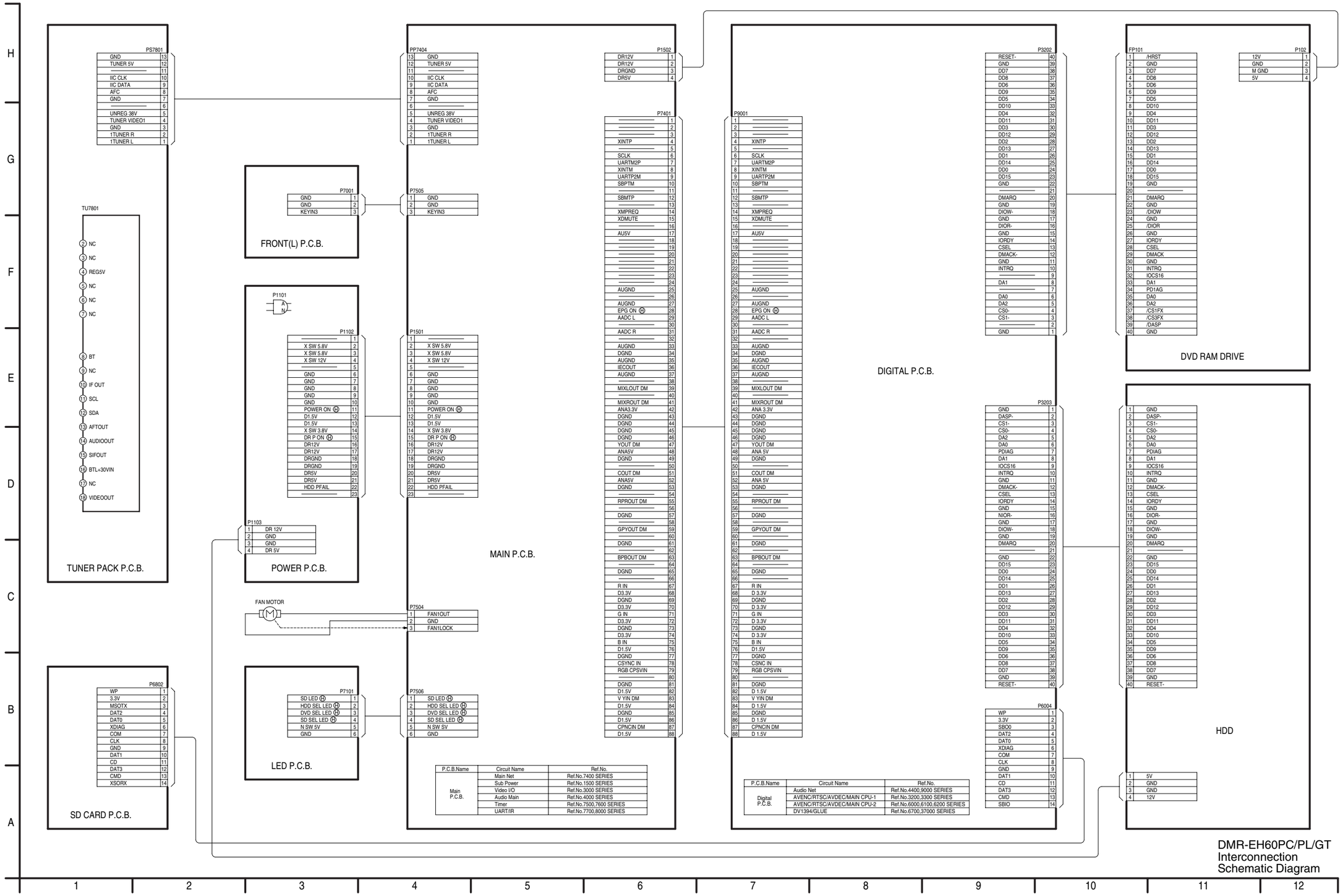
19.4. Analog Timer Block Diagram



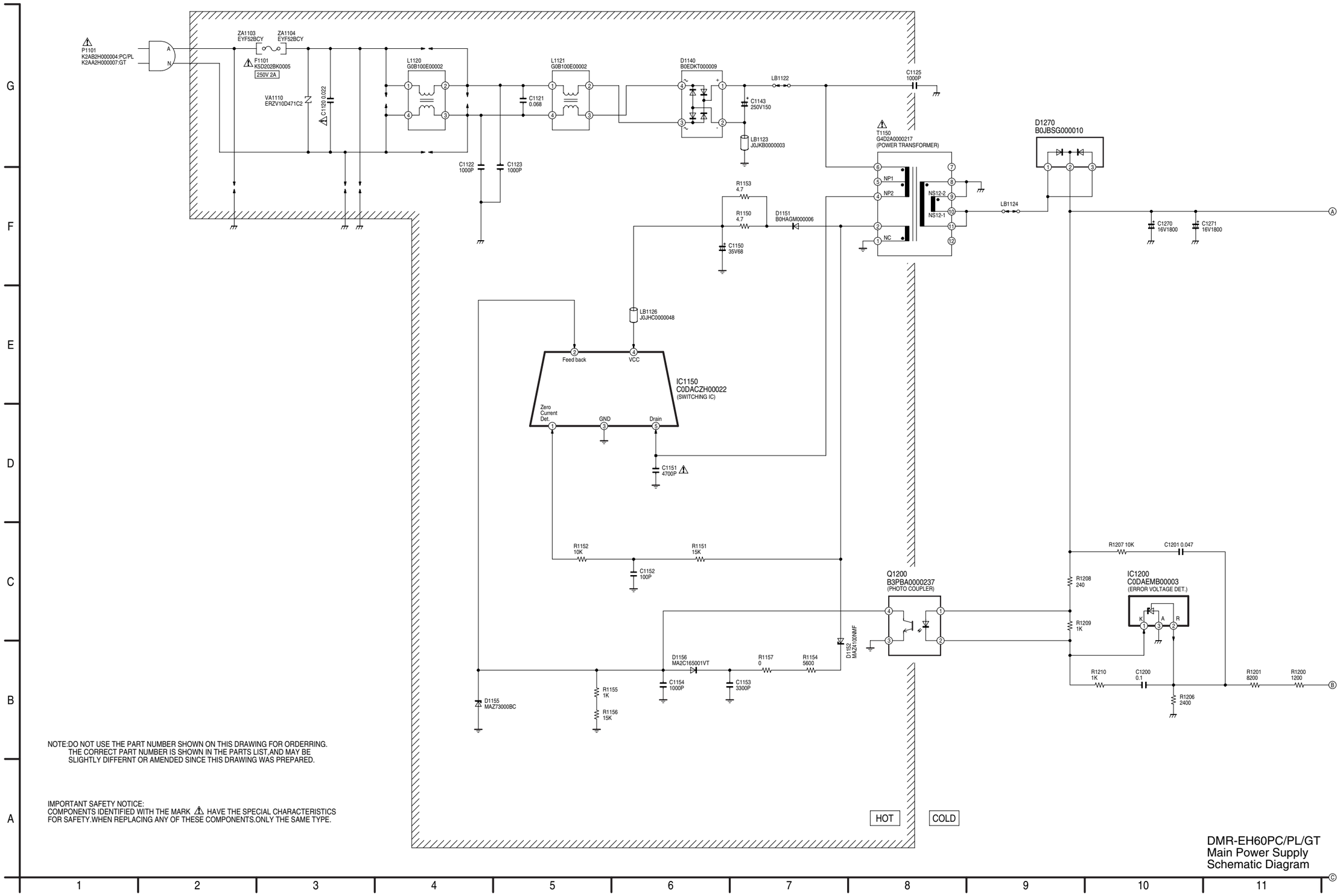
DMR-EH60PC/PL/GT
Analog Timer Block Diagram

20 Schematic Diagram

20.1. Interconnection Schematic Diagram



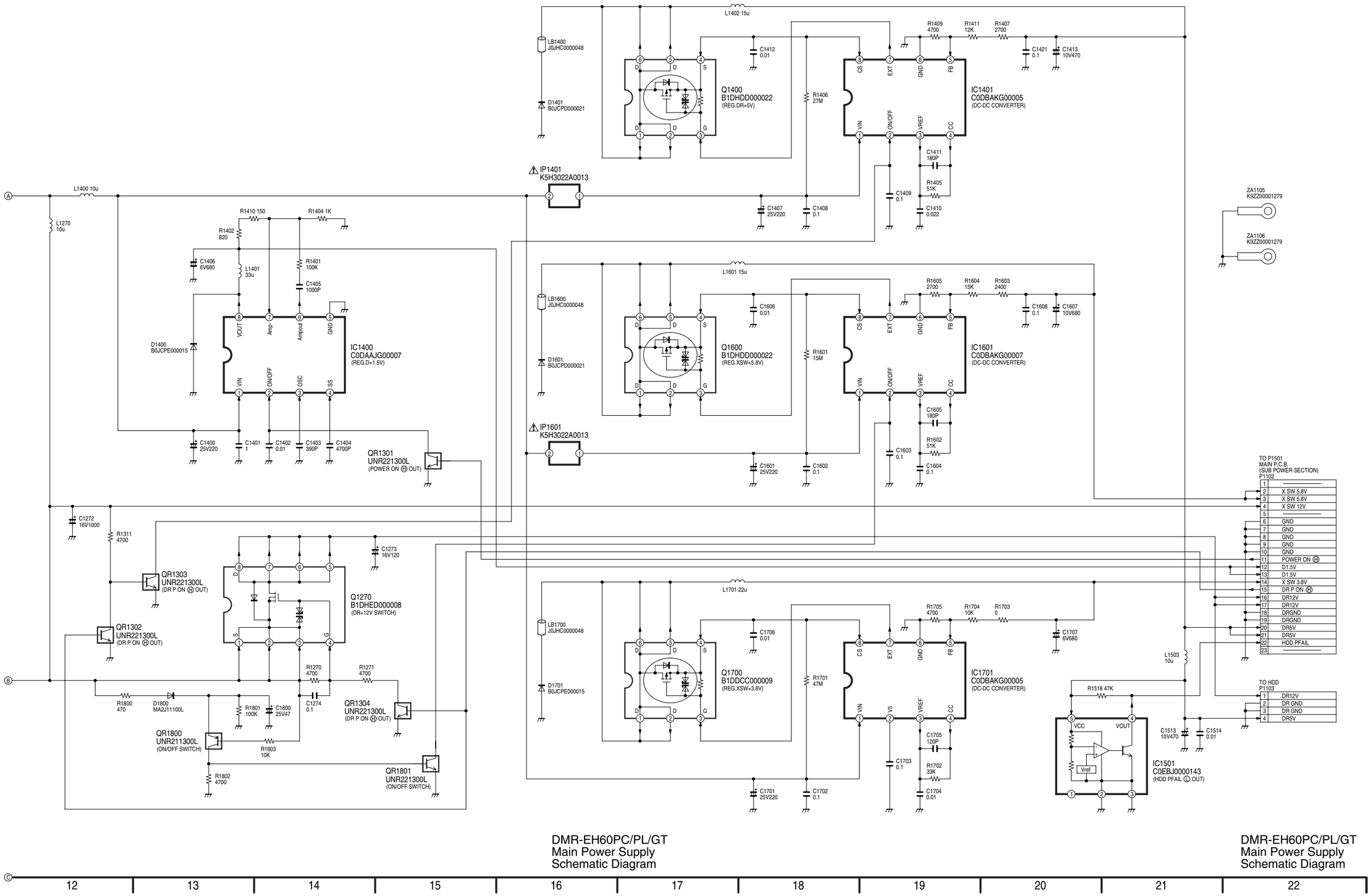
20.2. Main Power Schematic Diagram



NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERRING.
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST,AND MAY BE
SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS
FOR SAFETY.WHEN REPLACING ANY OF THESE COMPONENTS.ONLY THE SAME TYPE.

DMR-EH60PC/PL/GT
Main Power Supply
Schematic Diagram

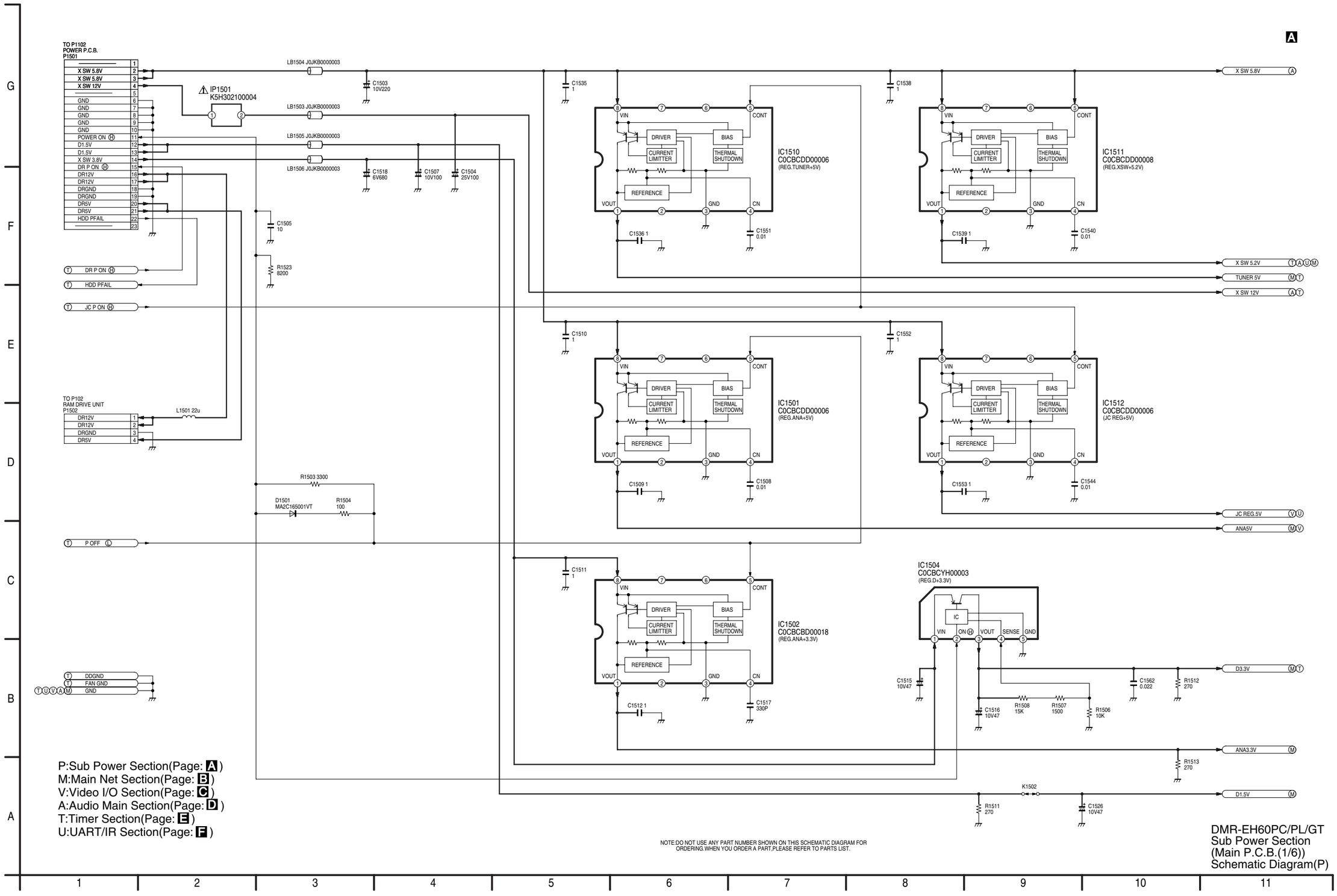


DMR-EH60PC/PL/GT
Main Power Supply
Schematic Diagram

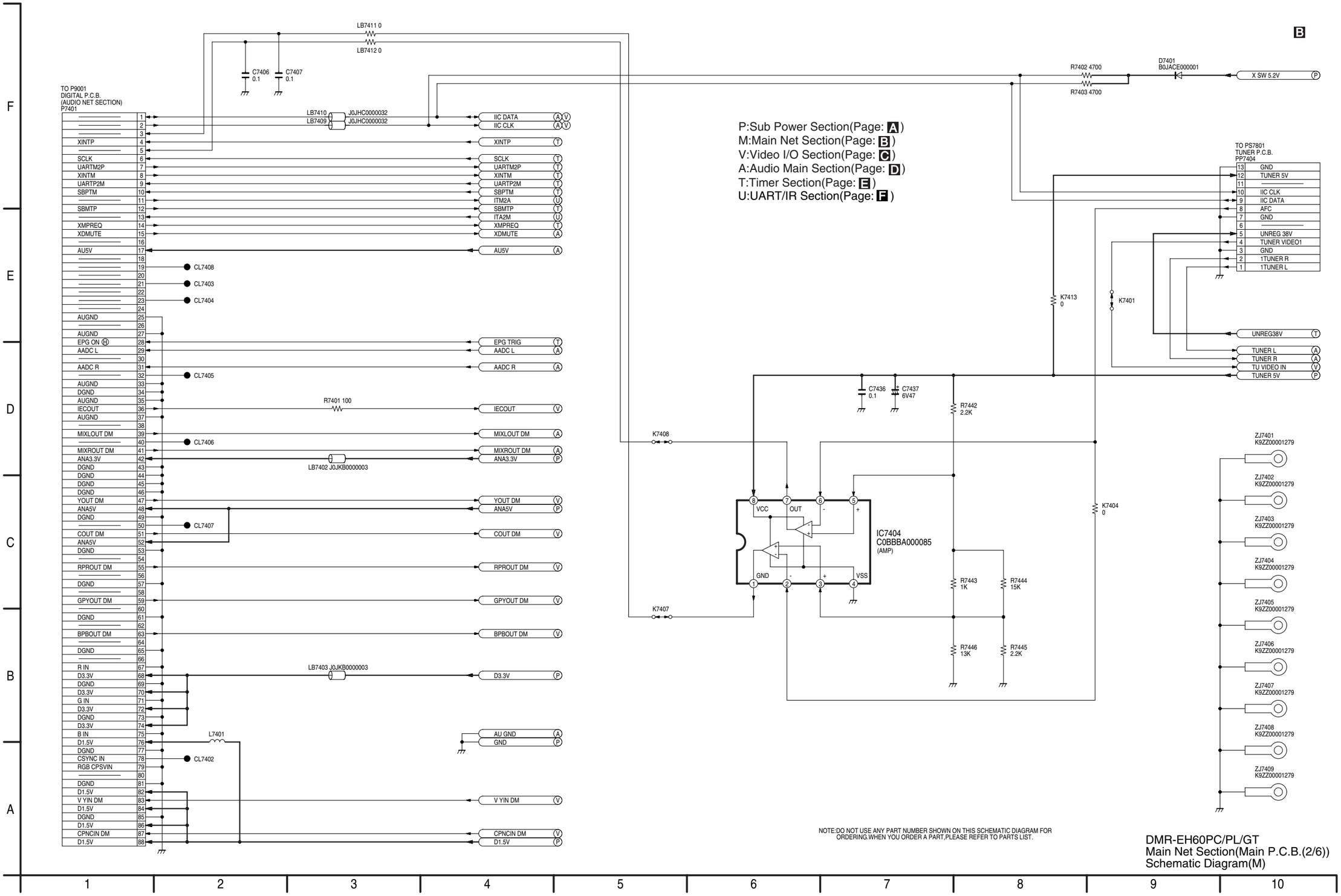
DMR-EH60PC/PL/GT
Main Power Supply
Schematic Diagram

12 13 14 15 16 17 18 19 20 21 22

20.3. Sub Power Section (Main P.C.B. (1/6)) Schematic Diagram (P)



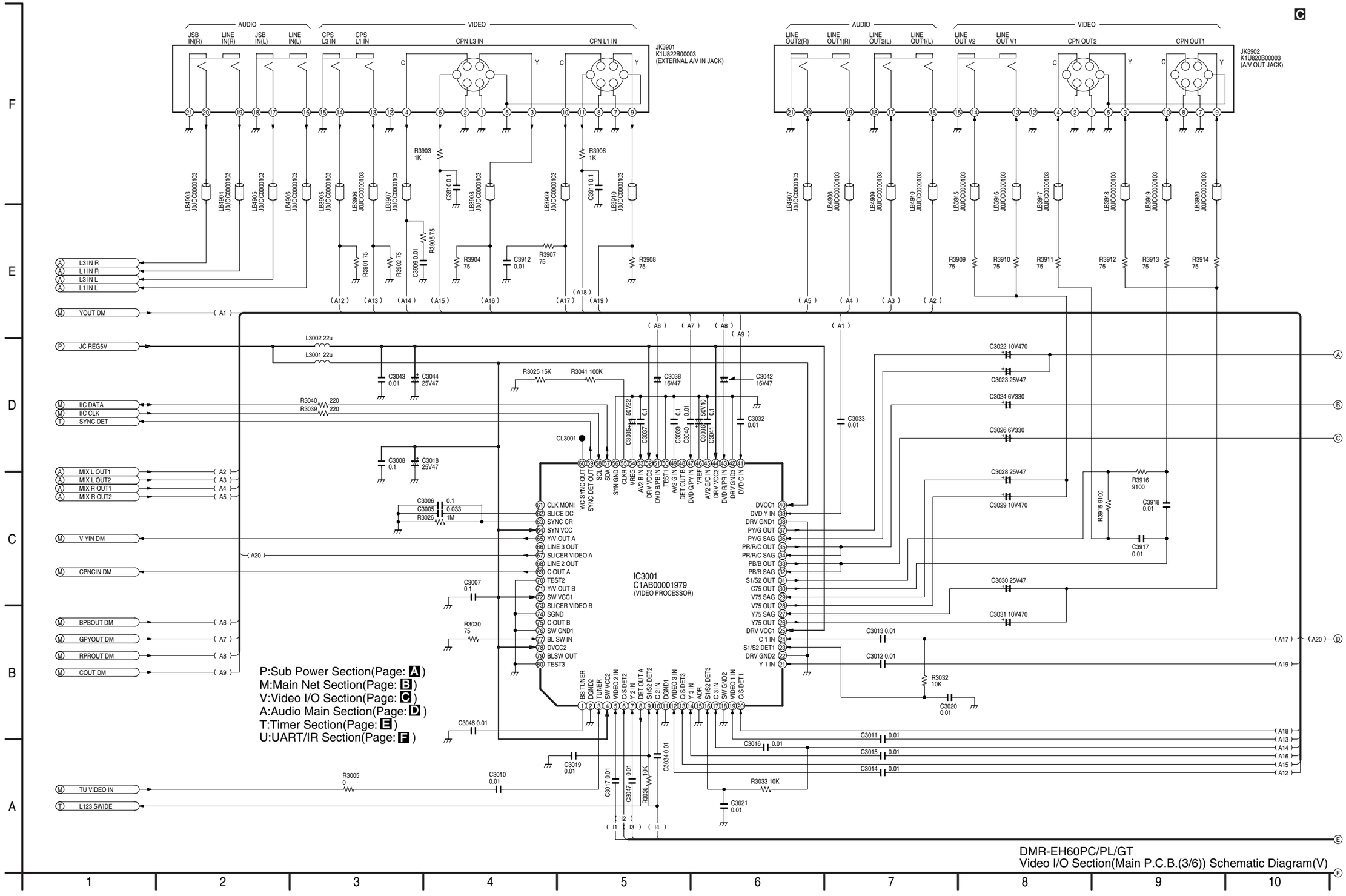
20.4. Main Net Section (Main P.C.B. (2/6)) Schematic Diagram (M)



NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

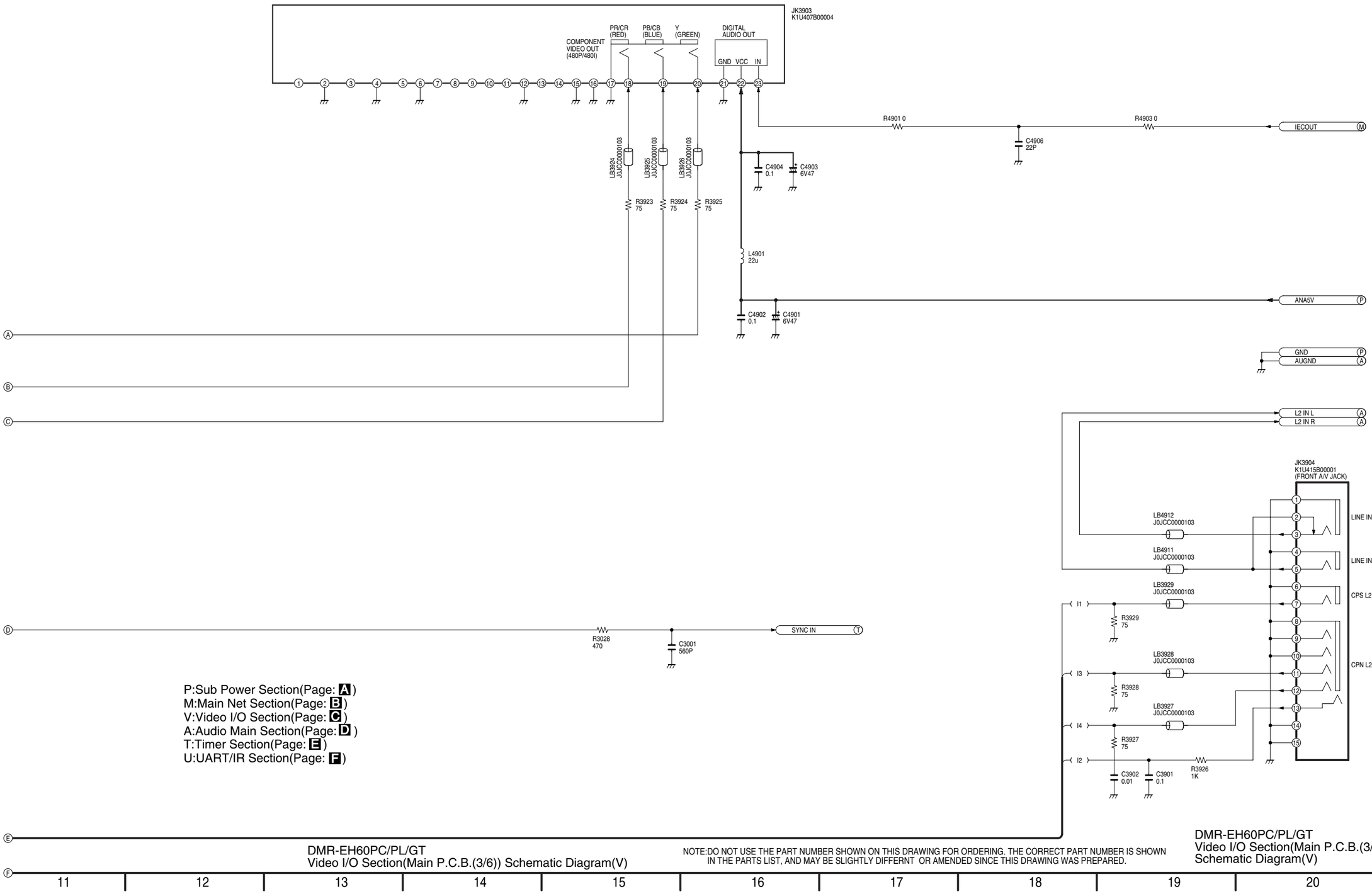
DMR-EH60PC/PL/GT
Main Net Section(Main P.C.B.(2/6))
Schematic Diagram(M)

20.5. Video I/O Section (Main P.C.B. (3/6)) Schematic Diagram (V)



DMR-EH60PC/PL/GT
Video I/O Section(Main P.C.B.(3/6)) Schematic Diagram(V)

C



P:Sub Power Section(Page: A)
M:Main Net Section(Page: B)
V:Video I/O Section(Page: C)
A:Audio Main Section(Page: D)
T:Timer Section(Page: E)
U:UART/IR Section(Page: F)

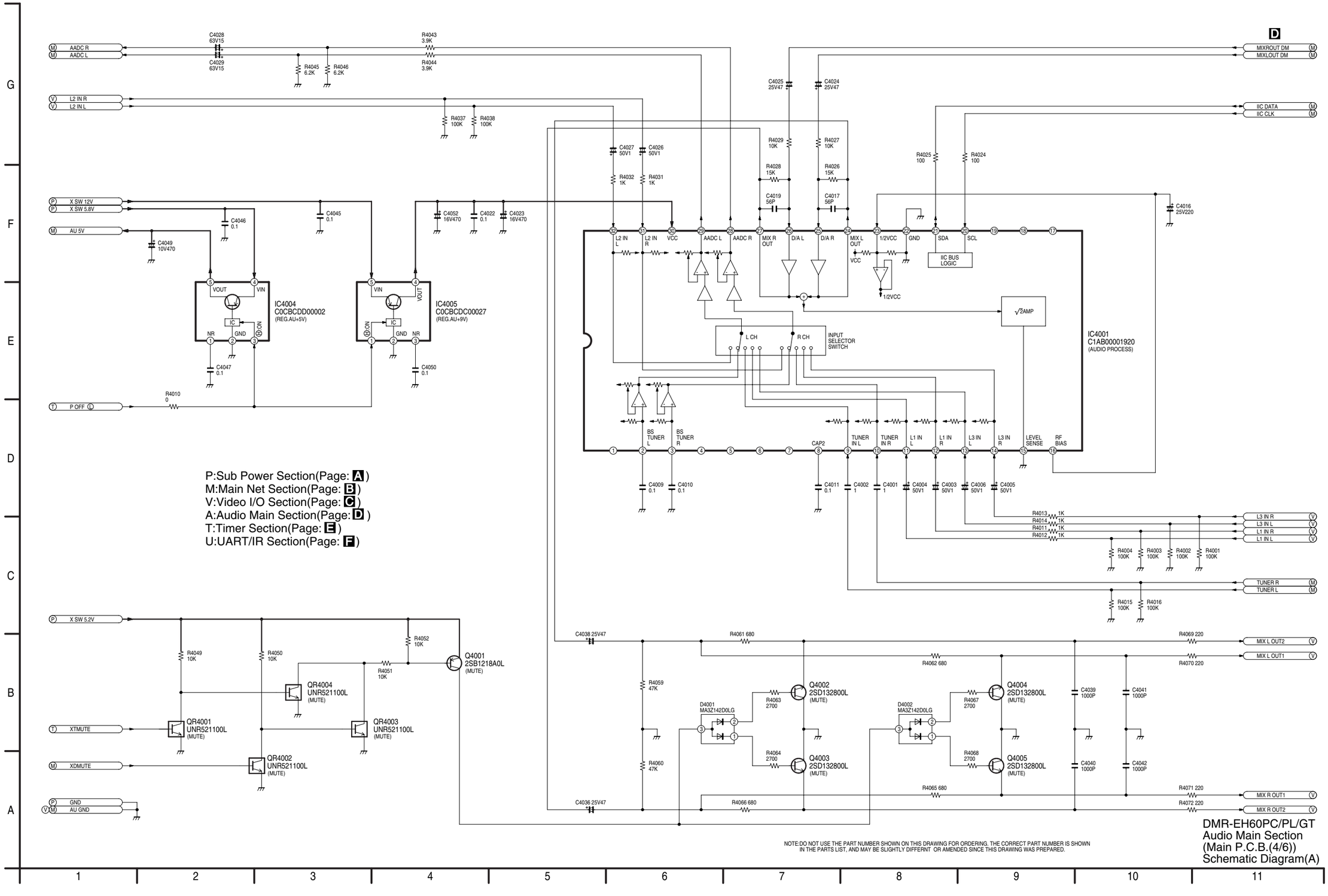
DMR-EH60PC/PL/GT
Video I/O Section(Main P.C.B.(3/6)) Schematic Diagram(V)

NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DMR-EH60PC/PL/GT
Video I/O Section(Main P.C.B.(3/6))
Schematic Diagram(V)

11 12 13 14 15 16 17 18 19 20

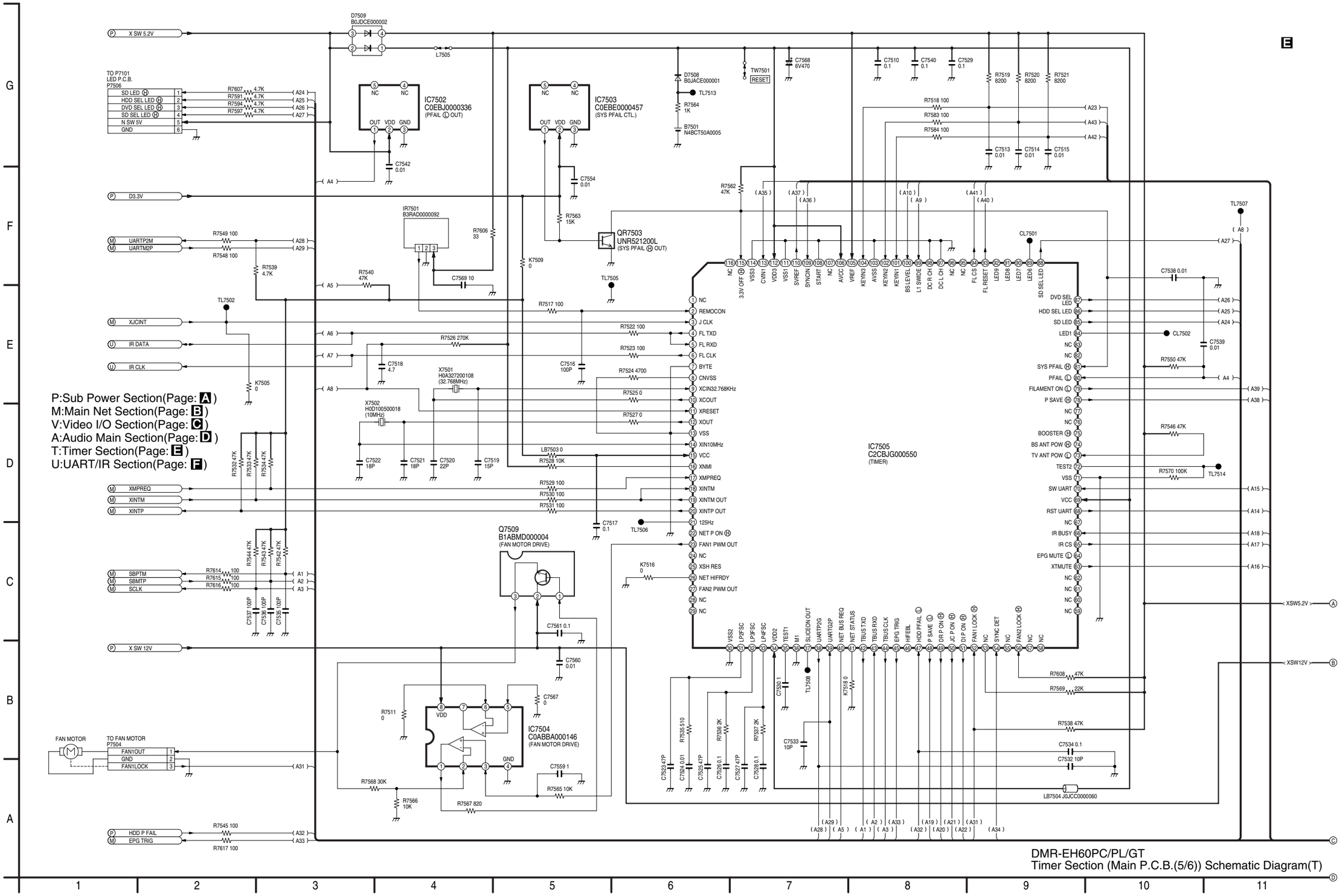
20.6. Audio Main Section (Main P.C.B. (4/6)) Schematic Diagram (A)



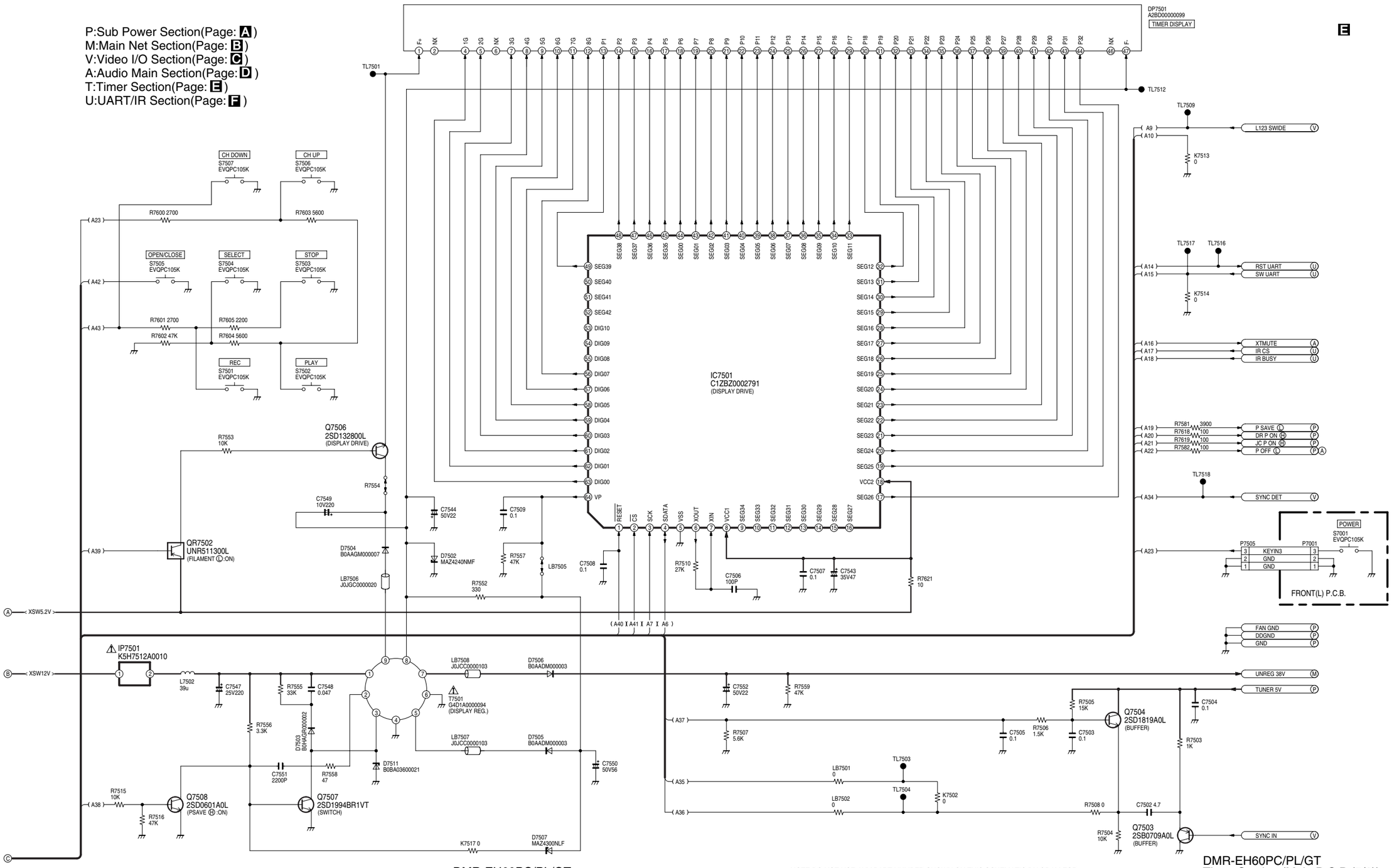
NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DMR-EH60PC/PL/GT
Audio Main Section
(Main P.C.B.(4/6))
Schematic Diagram(A)

20.7. Timer Section (Main P.C.B. (5/6)) Schematic Diagram (T)



P:Sub Power Section(Page: A)
M:Main Net Section(Page: B)
V:Video I/O Section(Page: C)
A:Audio Main Section(Page: D)
T:Timer Section(Page: E)
U:UART/IR Section(Page: F)

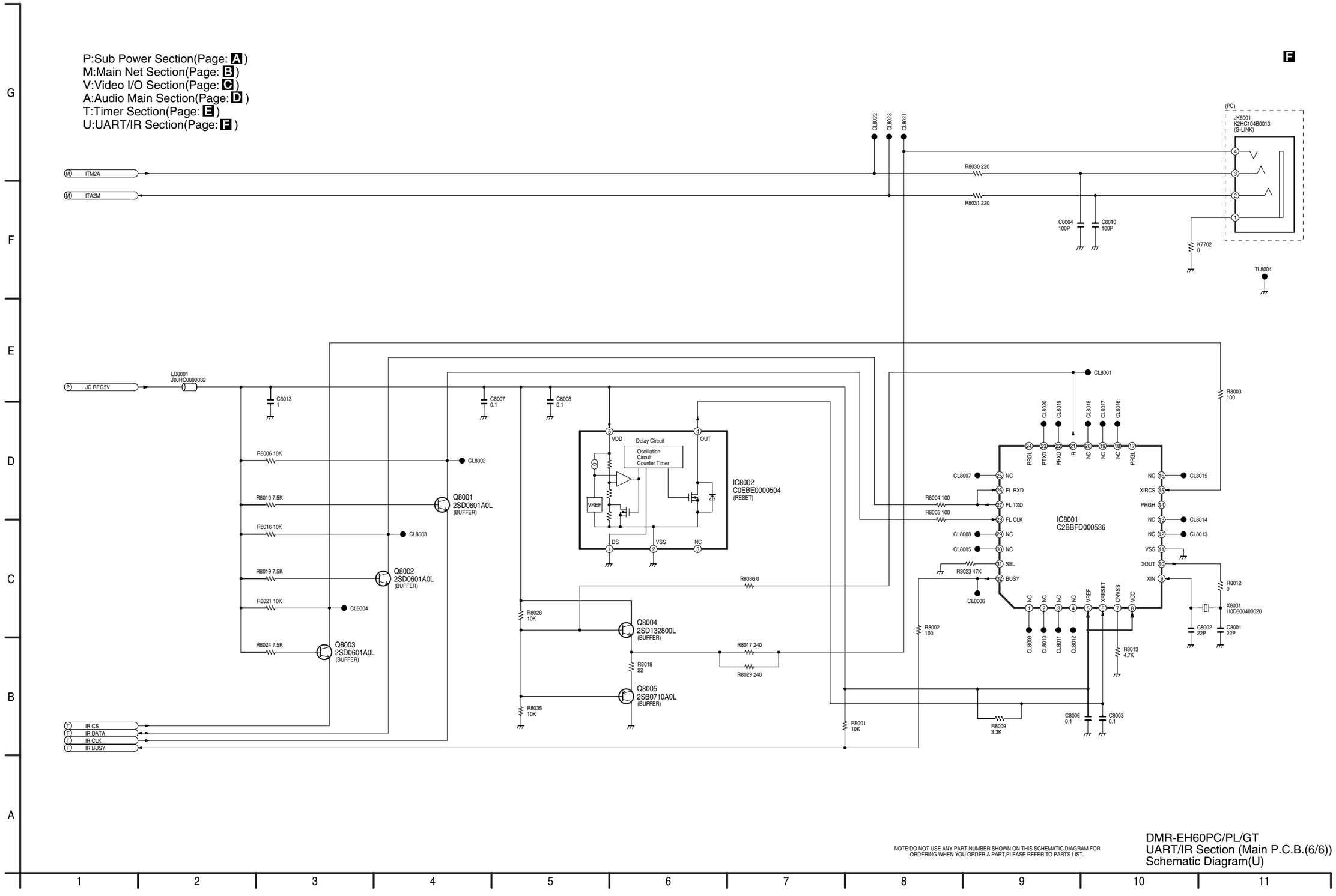


DMR-EH60PC/PL/GT
Timer Section (Main P.C.B.(5/6)) Schematic Diagram(T)

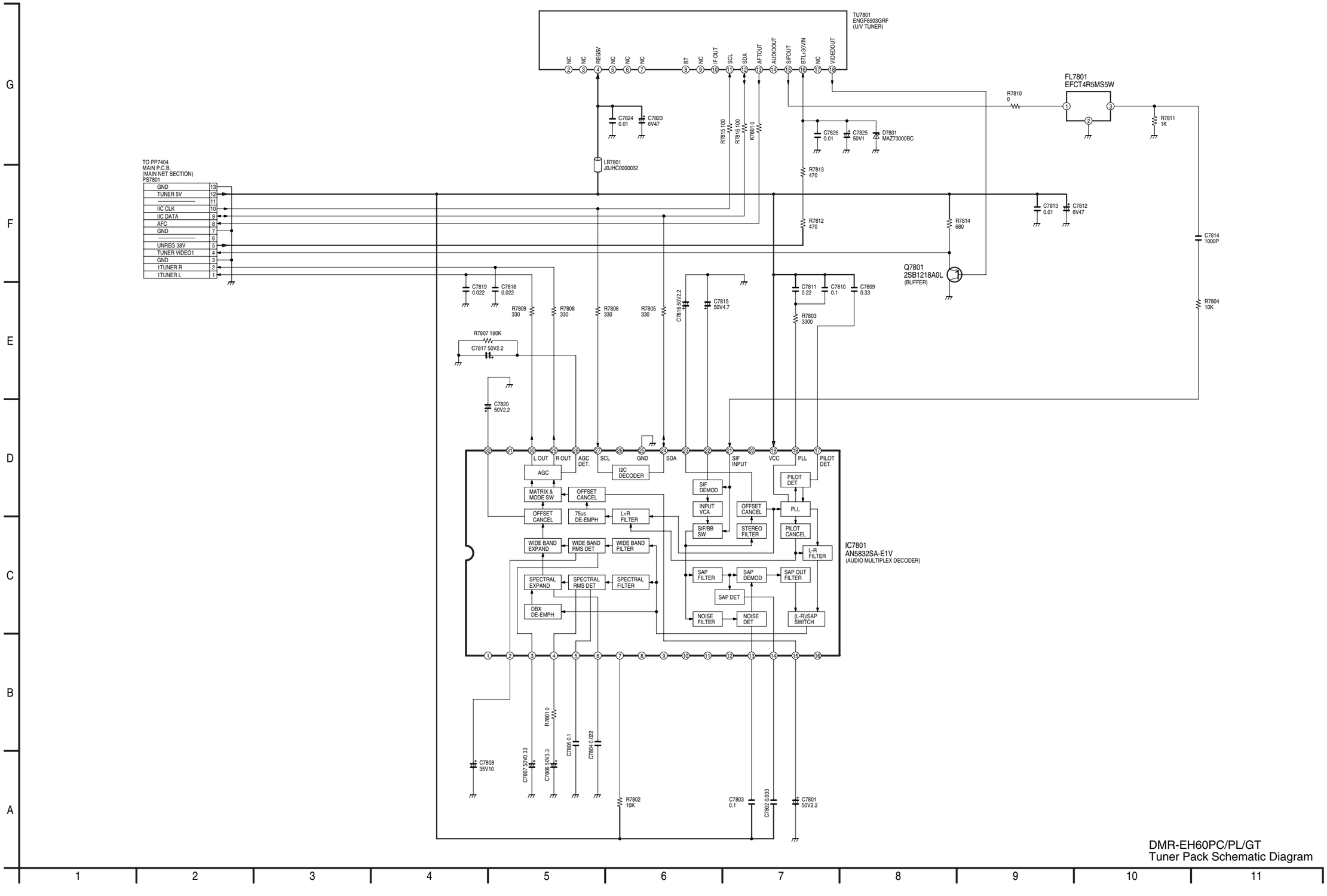
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

DMR-EH60PC/PL/GT
Timer Section (Main P.C.B.(5/6)) Schematic Diagram(T)

20.8. UART/IR Section (Main P.C.B. (6/6)) Schematic Diagram (U)

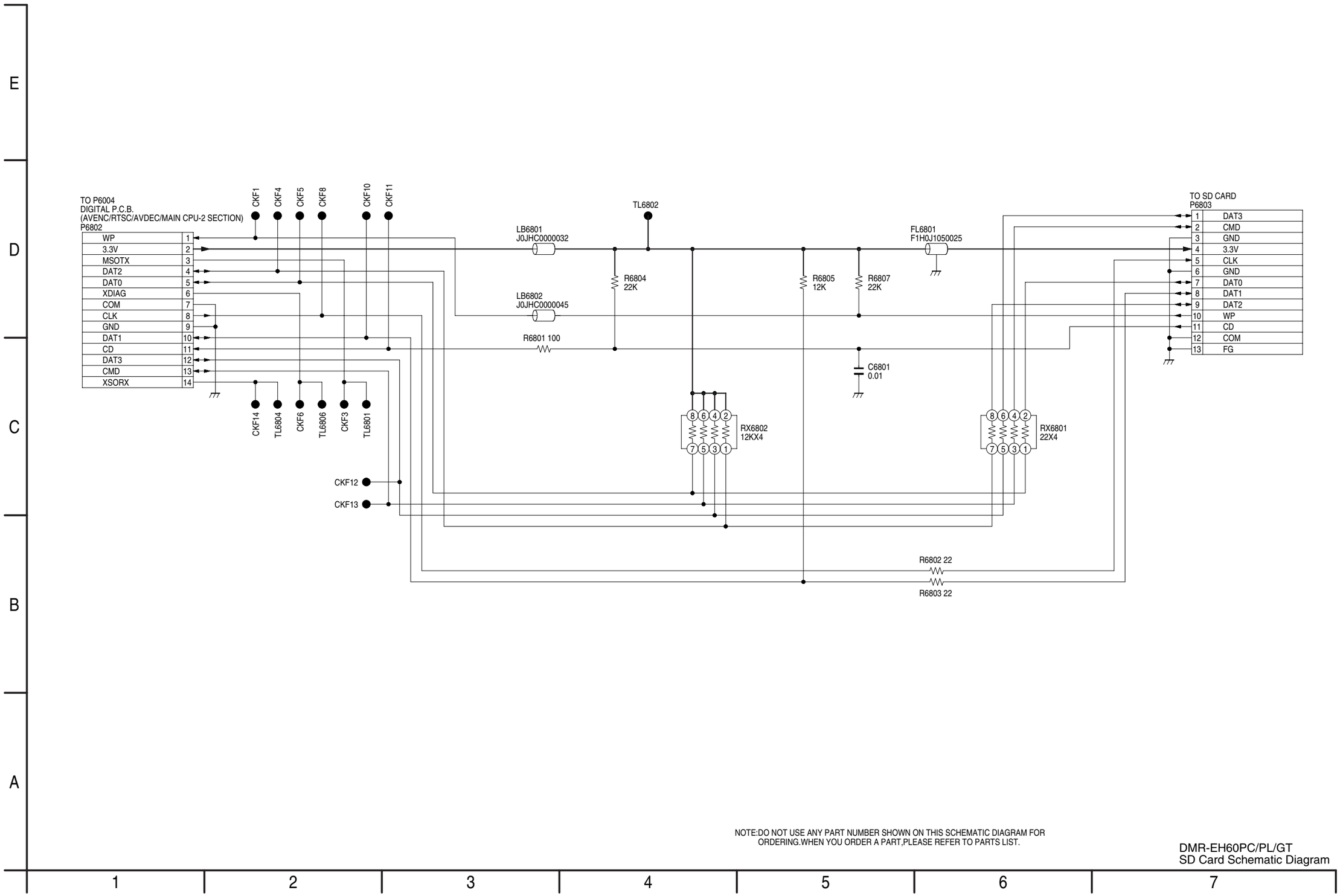


20.9. Tuner Pack Schematic Diagram



DMR-EH60PC/PL/GT
Tuner Pack Schematic Diagram

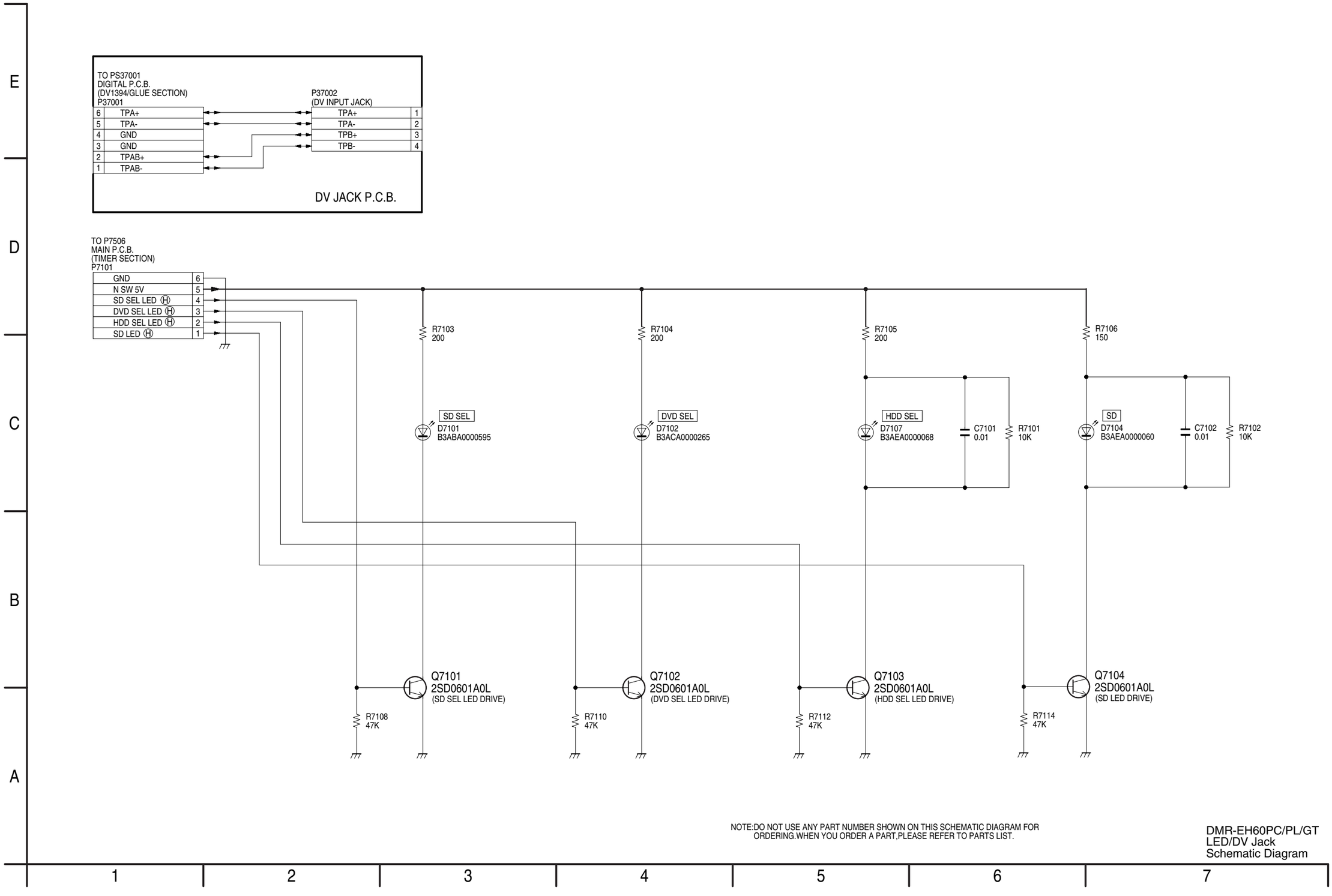
20.10. SD Card Schematic Diagram



NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

DMR-EH60PC/PL/GT
SD Card Schematic Diagram

20.11. LED/DV Jack Schematic Diagram



NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

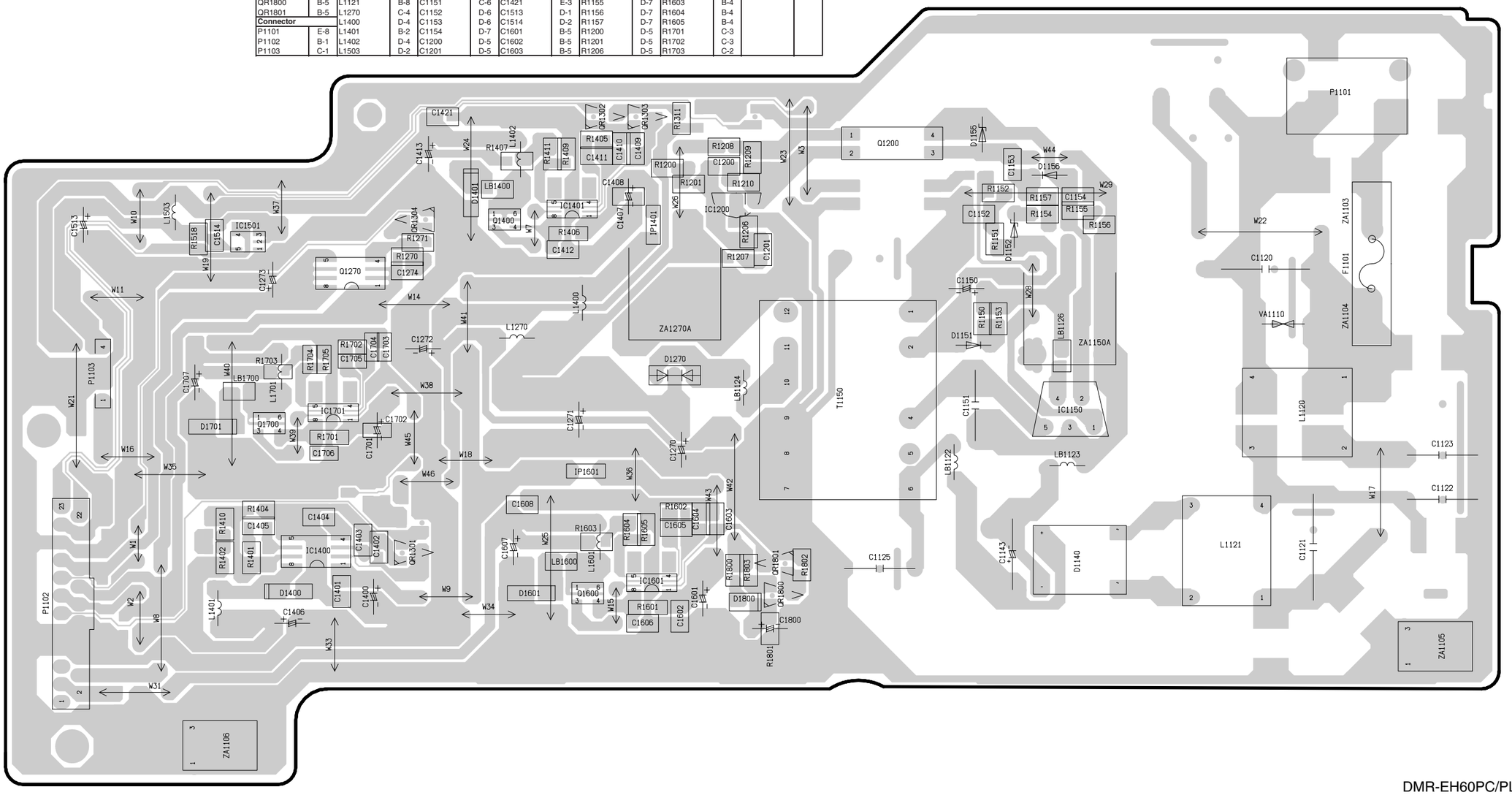
DMR-EH60PC/PL/GT
LED/DV Jack
Schematic Diagram

21 Print Circuit Board

21.1. Power P.C.B.

Power P.C.B.

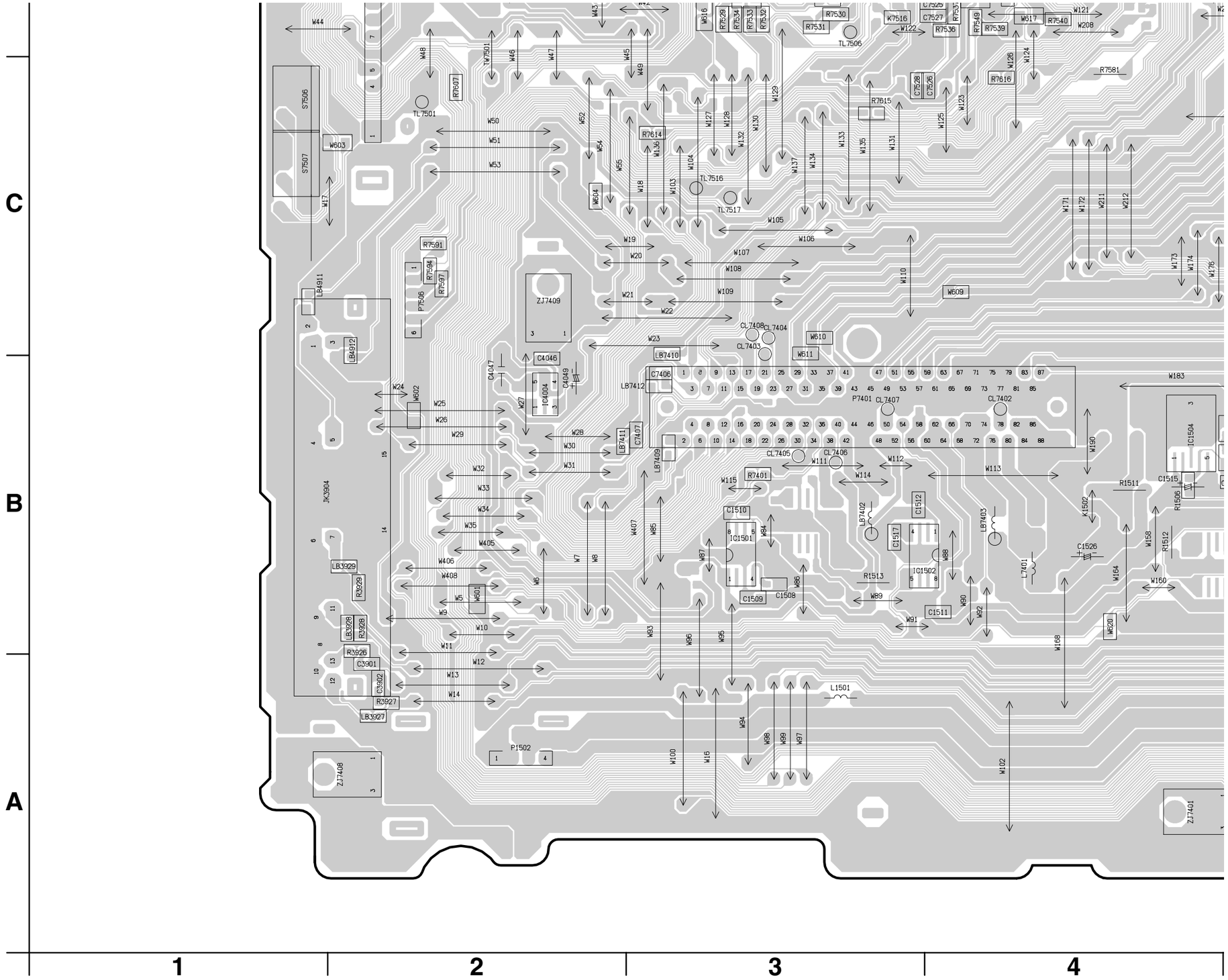
Power P.C.B.															
Integrated Circuit		**Diode**		L1601	B-4	C1270	C-5	C1604	B-5	R1207	D-5	R1704	C-3
IC1150	C-7	D1140	B-7	L1701	C-2	C1271	C-4	C1605	B-5	R1208	D-5	R1705	C-3
IC1200	D-5	D1151	C-6	LB1122	C-6	C1272	C-3	C1606	B-4	R1209	D-5	R1800	B-5
IC1400	B-3	D1152	D-6	LB1123	C-7	C1273	D-2	C1607	B-4	R1210	D-5	R1801	B-5
IC1401	D-4	D1155	D-6	LB1124	C-5	C1274	D-3	C1608	B-4	R1270	D-3	R1802	B-5
IC1501	D-2	D1156	D-7	LB1126	C-7	C1400	B-3	C1701	C-3	R1271	D-3	R1803	B-5
IC1601	B-4	D1270	C-5	LB1400	D-4	C1401	B-3	C1702	C-3	R1311	E-5	**Varistor**	
IC1701	C-3	D1400	B-2	LB1600	B-4	C1402	B-3	C1703	C-3	R1401	B-2	VA1110	C-8
Transistor		D1401	D-3	LB1700	C-2	C1403	B-3	C1704	C-3	R1402	B-2		
Q1200	D-6	D1601	B-4	**Fuse**		C1404	B-3	C1705	C-3	R1404	B-2		
Q1270	D-3	D1701	C-2	F1101	D-8	C1405	B-2	C1706	C-3	R1405	D-4		
Q1400	D-4	D1800	B-5	**Capacitor**		C1406	B-2	C1707	C-2	R1406	D-4		
Q1600	B-4	**IC Protector**		C1120	D-8	C1407	D-4	C1800	B-5	R1407	D-4		
Q1700	C-2	IP1401	D-4	C1121	B-8	C1408	D-4	**Resistor**		R1409	D-4		
Transistor-resistor		IP1601	C-4	C1122	B-9	C1409	D-4	R1150	C-6	R1410	B-2		
QR1301	B-3	**Transformer**		C1123	C-9	C1410	D-4	R1151	D-6	R1411	D-4		
QR1302	E-4	T1150	C-6	C1125	B-6	C1411	D-4	R1152	D-6	R1518	D-2		
QR1303	E-4	**Coil**		C1143	B-6	C1412	D-4	R1153	C-6	R1601	B-4		
QR1304	D-3	L1120	C-8	C1150	D-6	C1413	D-3	R1154	D-7	R1602	B-5		
QR1800	B-5	L1121	B-8	C1151	C-6	C1421	E-3	R1155	D-7	R1603	B-4		
QR1801	B-5	L1270	C-4	C1152	D-6	C1513	D-1	R1156	D-7	R1604	B-4		
Connector		L1400	D-4	C1153	D-6	C1514	D-2	R1157	D-7	R1605	B-4		
P1101	E-8	L1401	B-2	C1154	D-7	C1601	B-5	R1200	D-5	R1701	C-3		
P1102	B-1	L1402	D-4	C1200	D-5	C1602	B-5	R1201	D-5	R1702	C-3		
P1103	C-1	L1503	D-2	C1201	D-5	C1603	B-5	R1206	D-5	R1703	C-2		



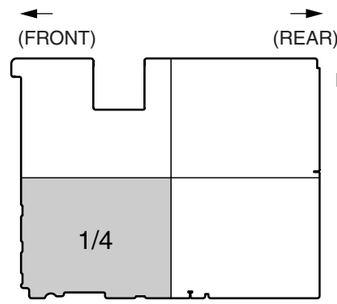
DMR-EH60PC/PL/GT
Power P.C.B.
(VEP01967A: PC/PL,
VEP01973A: GT)

21.2. Main P.C.B.

21.2.1. Main P.C.B. (1/4 Section)



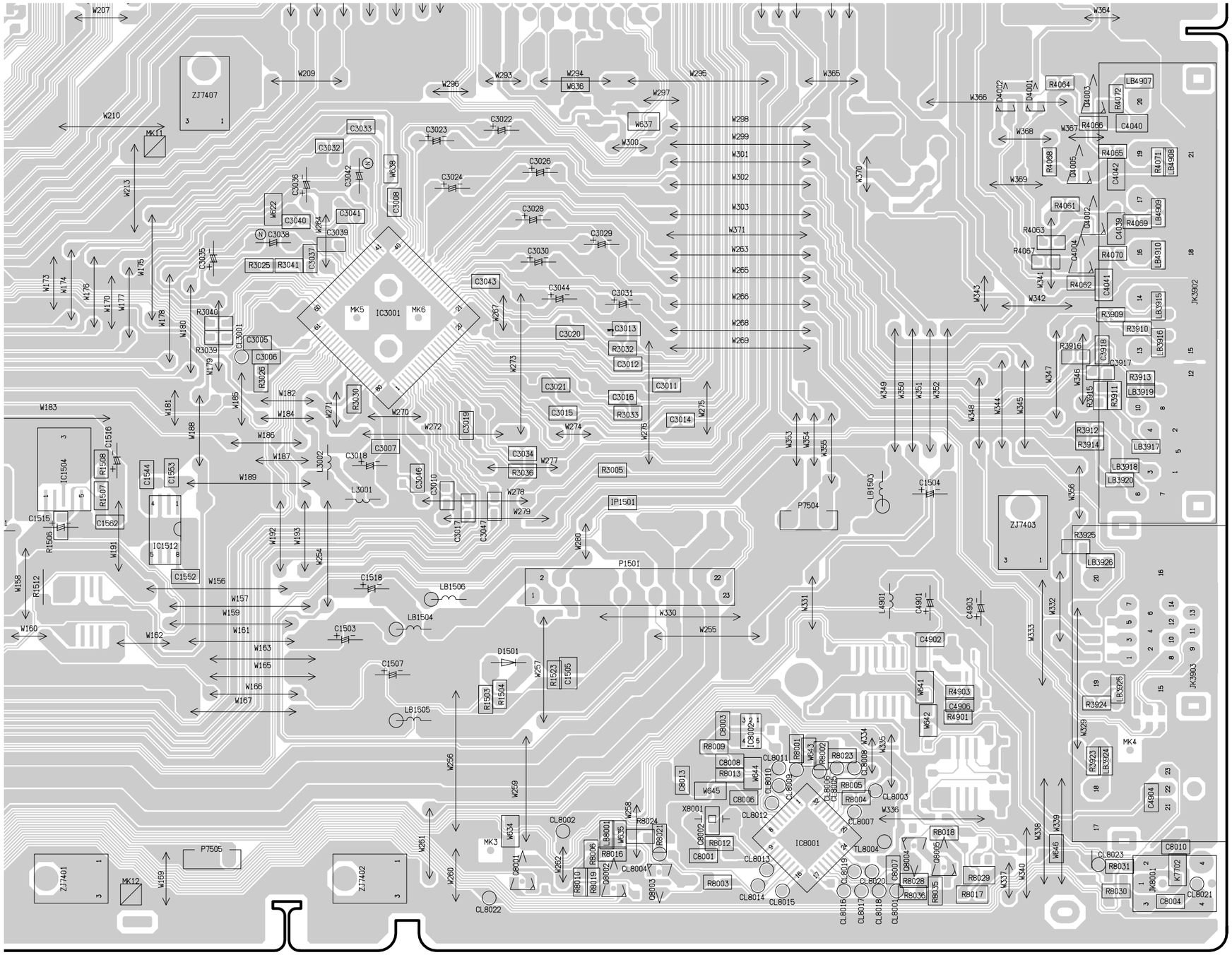
(FRONT) (REAR)

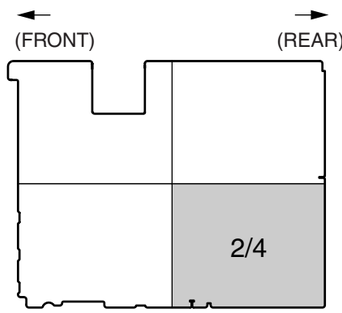


Location Map

DMR-EH60PC/PL/GT
Main P.C.B. (VEP79111F: EH60PC
VEP79111G: EH60PL/GT)
(1/4 Section)

21.2.2. Main P.C.B. (2/4 Section)



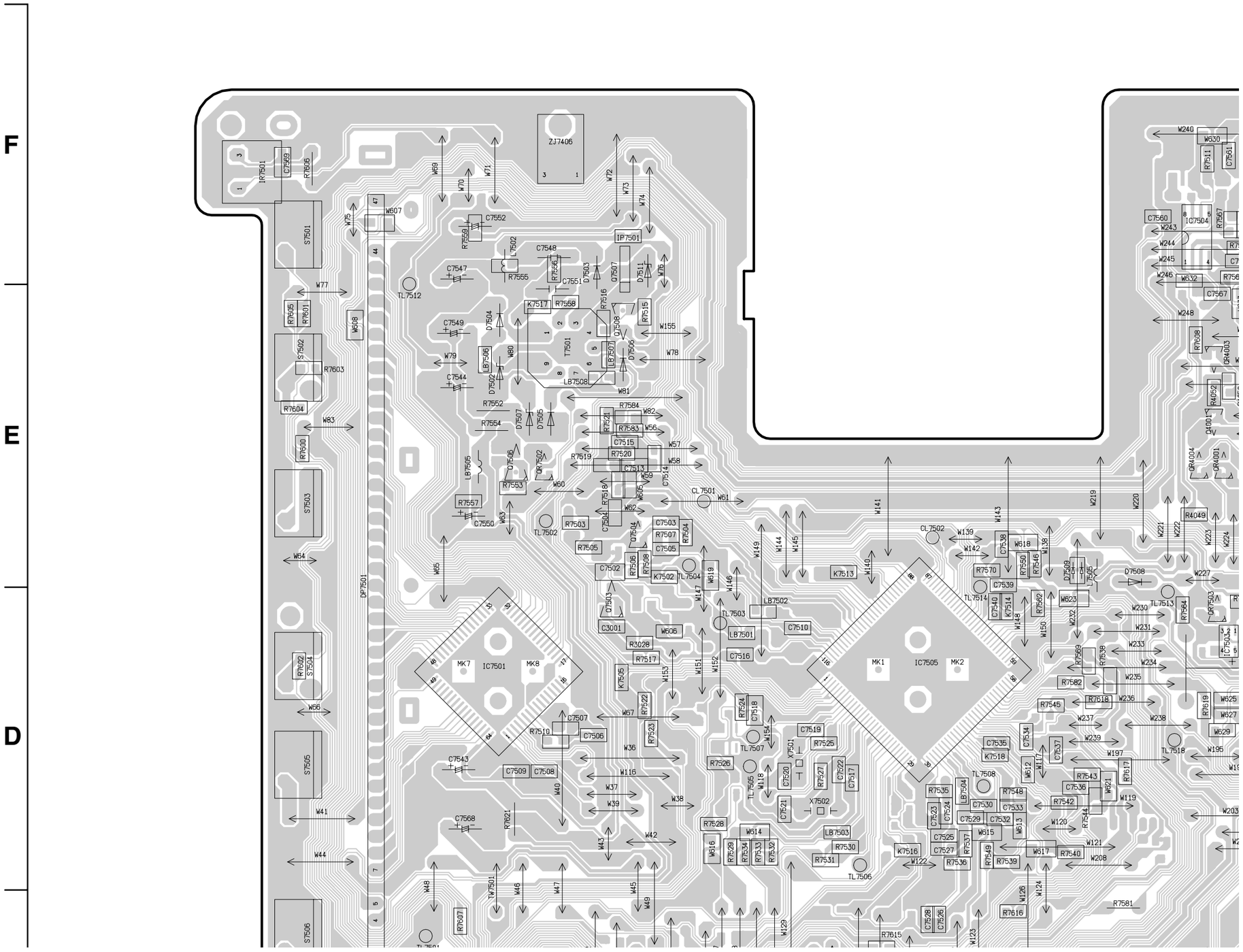


Location Map

DMR-EH60PC/PL/GT
Main P.C.B. (VEP79111F: EH60PC
VEP79111G: EH60PL/GT)
(2/4 Section)

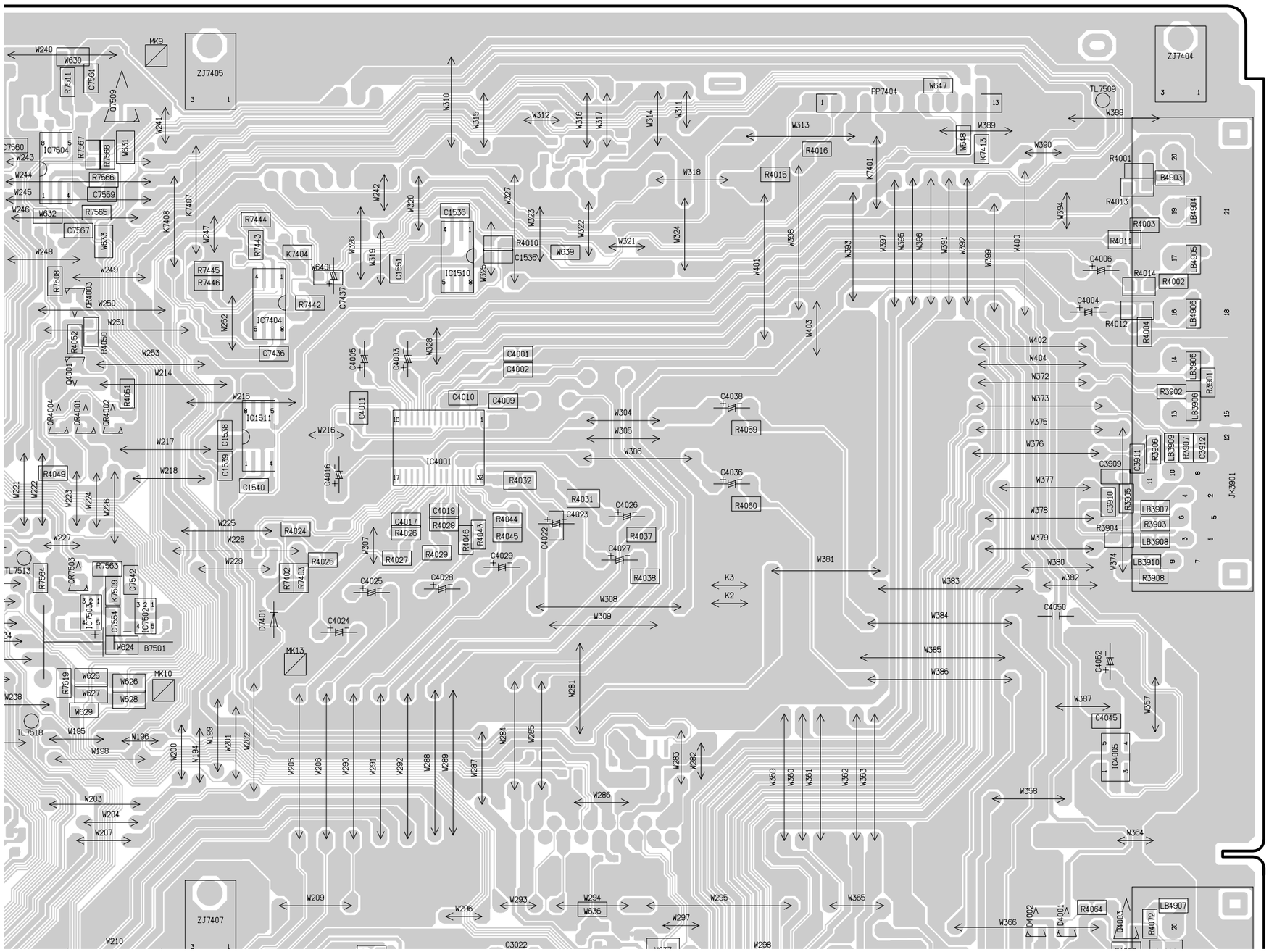
5 6 7 8

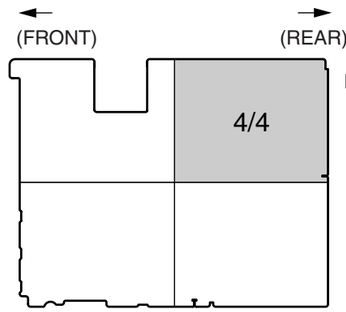
21.2.3. Main P.C.B. (3/4 Section)



DMR-EH60PC/PL/GT
Main P.C.B. (VEP79111F: EH60PC
VEP79111G: EH60PL/GT)
(3/4 Section)

21.2.4. Main P.C.B. (4/4 Section)





Location Map

DMR-EH60PC/PL/GT
Main P.C.B. (VEP79111F: EH60PC
VEP79111G: EH60PL/GT)
(4/4 Section)

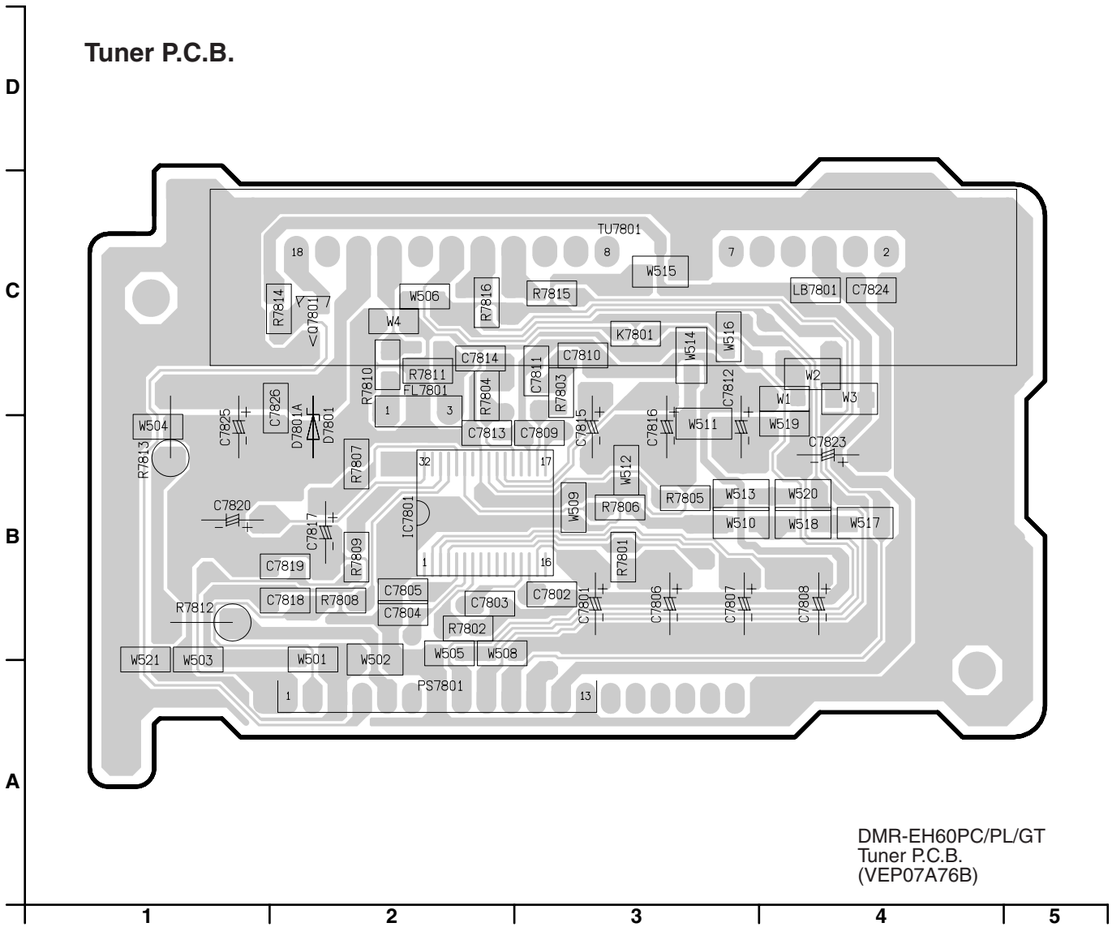
21.2.5. Main P.C.B. Address Information

Main P.C.B.

Integrated Circuit	
IC1501	B-3
IC1502	B-3
IC1504	B-4
IC1510	E-6
IC1511	E-5
IC1512	B-5
IC3001	C-5
IC4001	E-6
IC4004	B-2
IC4005	D-8
IC7404	E-5
IC7501	D-2
IC7502	D-5
IC7503	D-4
IC7504	F-4
IC7505	D-3
IC8001	A-7
IC8002	A-7
Transistor	
Q4001	E-4
Q4002	C-8
Q4003	C-8
Q4004	C-8
Q4005	C-8
Q7503	D-2
Q7504	E-3
Q7506	E-2
Q7507	F-2
Q7508	E-2
Q7509	F-5
Q8001	A-6
Q8002	A-6
Q8003	A-6
Q8004	A-7
Q8005	A-7
Transistor-resistor	
QR4001	E-4
QR4002	E-5
QR4003	E-4
QR4004	E-4
QR7502	E-2
QR7503	D-4
Test Point	
CL3001	C-5
CL7402	B-4
CL7403	C-3
CL7404	C-3
CL7405	B-3
CL7406	B-3
CL7407	B-3
CL7408	C-3
CL7501	E-3
CL7502	E-3
CL8001	A-7
CL8002	A-6
CL8003	A-7
CL8004	A-6
CL8005	A-7
CL8006	A-7
CL8007	A-7
CL8008	A-7
CL8009	A-7
CL8010	A-7
CL8011	A-7
CL8012	A-7
CL8013	A-7
CL8014	A-7
CL8015	A-7
CL8016	A-7
CL8017	A-7
CL8018	A-7
CL8019	A-7
CL8020	A-7
CL8021	A-8
CL8022	A-6
CL8023	A-8
TL7501	C-2
TL7502	E-2
TL7503	D-3
TL7504	E-3
TL7505	D-3
TL7506	D-3
TL7507	D-3
TL7508	D-4
TL7509	F-8
TL7512	F-2
TL7513	E-4
TL7514	E-4
TL7516	C-3
TL7517	C-3
TL7518	D-4
TL8004	A-7
TW7501	D-2
Connector	
JK3901	E-8
JK3902	C-8
JK3903	B-8
JK3904	B-2
JK8001	A-8
P1501	B-6
P1502	A-2
P7401	B-3
P7504	B-7
P7505	A-5
P7506	C-2
PP7404	F-7
Diode	
D1501	B-6
D4001	C-7
D4002	C-7
D7401	D-5
D7502	E-2
D7503	F-2
D7504	E-2
D7505	E-2
D7506	E-2
D7507	E-2
D7508	E-4
D7509	E-4
D7511	F-3
Crystal Osillator	
X7501	D-3
X7502	D-3
X8001	A-6
IC Protector	
IP1501	B-6
IP7501	F-2
Coil	
L1501	A-3
L3001	B-5
L3002	B-5
L4901	B-7
L7401	B-4
L7502	F-2
L7505	E-4
LB1503	B-7
LB1504	B-5
LB1505	A-5
LB1506	B-6
LB3905	E-8
LB3906	E-8
LB3907	E-8
LB3908	E-8
LB3909	E-8
LB3910	D-8
LB3915	C-8
LB3916	C-8
LB3917	B-8
LB3918	B-8
LB3919	B-8
LB3920	B-8
LB3924	A-8
LB3925	B-8
LB3926	B-8
LB3927	A-2
LB3928	B-2
LB3929	B-2
LB4903	F-8
LB4904	F-8
LB4905	E-8
LB4906	E-8
LB4907	C-8
LB4908	C-8
LB4909	C-8
LB4910	C-8
LB4911	C-1
LB4912	C-2
LB7402	B-3
LB7403	B-4
LB7409	B-3
LB7410	B-3
LB7411	B-2
LB7412	B-3
LB7501	D-3
LB7502	D-3
LB7503	D-3
LB7504	D-4
LB7505	E-2
LB7506	E-2
LB7507	E-2
LB7508	E-2
LB8001	A-6
Capacitor	
C1503	B-5
C1504	B-7
C1505	B-6
C1507	B-5
C1508	B-3
C1509	B-3
C1510	B-3
C1511	B-4
C1512	B-3
C1515	B-4
C1516	B-5
C1517	B-3
C1518	B-5
C1526	B-4
C1535	E-6
C1536	F-6
C1538	E-5
C1539	E-5
C1540	E-5
C1544	B-5
C1551	E-5
C1552	B-5
C1553	B-5
C1562	B-5
C3001	D-2
C3005	C-5
C3006	C-5
C3007	B-5
C3008	C-5
C3010	B-6
C3011	B-6
C3012	C-6
C3013	C-6
C3014	B-6
C3015	B-6
C3016	B-6
C3017	B-6
C3018	B-5
C3019	B-6
C3020	C-6
C3021	B-6
C3022	C-6
C3023	C-6
C3024	C-6
C3026	C-6
C3028	C-6
C3029	C-6
C3030	C-6
C3031	C-6
C3032	C-5
C3033	C-5
C3034	B-6
C3035	C-5
C3036	C-5
C3037	C-5
C3038	C-5
C3039	C-5
C3040	C-5
C3041	C-5
C3042	C-5
C3043	C-6
C3044	C-6
C3046	B-5
C3047	B-6
C3901	A-2
C3902	A-2
C3909	E-8
C3910	E-8
C3911	E-8
C3912	E-8
C3917	C-8
C3918	C-8
C4001	E-6
C4002	E-6
C4003	E-5
C4004	E-7
C4005	E-5
C4006	E-8
C4009	E-6
C4010	E-6
C4011	E-5
C4016	E-5
C4017	E-5
C4019	E-6
C4022	E-6
C4023	E-6
C4024	D-5
C4025	D-5
C4026	E-6
C4027	D-6
C4028	D-6
C4029	D-6
C4036	E-6
C4038	E-6
C4039	C-8
C4040	C-8
C4041	C-8
C4042	C-8
C4045	D-7
C4046	B-2
C4047	B-2
C4049	B-2
C4050	D-7
C4052	D-8
C4901	B-7
C4902	B-7
C4903	B-7
C4904	A-8
C4906	B-7
C7406	B-3
C7407	B-3
C7436	E-5
C7437	E-5
C7502	E-2
C7503	E-3
C7504	E-2
C7505	E-3
C7506	D-2
C7507	D-2
C7508	D-2
C7509	D-2
C7510	D-3
C7513	E-3
C7514	E-3
C7515	E-2
C7516	D-3
C7517	D-3
C7518	D-3
C7519	D-3
C7520	D-3
C7521	D-3
C7522	D-3
C7523	D-3
C7524	D-4
C7525	D-4
C7526	C-4
C7527	D-4
C7528	C-3
C7529	D-4
C7530	D-4
C7532	D-4
C7533	D-4
C7534	D-4
C7535	D-4
C7536	D-4
C7537	D-4
C7538	E-4
C7539	E-4
C7540	D-4
C7542	D-5
C7543	D-2
C7544	E-2
C7547	F-2
C7548	F-2
C7549	E-2
C7550	E-2
C7551	E-2
C7552	F-2
C7554	D-5
C7559	F-4
C7560	F-4
C7561	F-4
C7567	E-4
C7568	D-2
C7569	F-1
C8001	A-6
C8002	A-6
C8003	A-6
C8004	A-8
C8006	A-6
C8007	A-7
C8008	A-6
C8010	A-8
C8013	A-6
Resistor	
R1503	B-6
R1504	B-6
R1506	B-4
R1507	B-5
R1508	B-5
R1511	B-4
R1512	B-4
R1513	B-3
R1523	B-6
R3005	B-6
R3025	C-5
R3026	C-5
R3028	D-3
R3030	B-5
R3032	C-6
R3033	B-6
R3036	B-6
R3039	C-5
R3040	C-5
R3041	C-5
R3901	E-8
R3902	E-8
R3903	E-8
R3904	E-8
R3905	E-8
R3906	E-8
R3907	E-8
R3908	D-8
R3909	C-8
R3910	C-8
R3911	B-8
R3912	B-8
R3913	C-8
R3914	B-8
R3915	B-8
R3916	C-8
R3923	A-8
R3924	B-8
R3925	B-8
R3926	B-2
R3927	A-2
R3928	B-2
R3929	B-2
R4001	F-8
R4002	E-8
R4003	E-8
R4004	E-8
R4010	E-6
R4011	E-8
R4012	E-8
R4013	F-8
R4014	E-8
R4015	F-7
R4016	F-7
R4024	E-5
R4025	D-5
R4026	E-5
R4027	D-5
R4028	E-6
R4029	E-6
R4031	E-6
R4032	E-6
R4037	E-6
R4038	D-6
R4043	E-6
R4044	E-6
R4045	E-6
R4046	E-6
R4049	E-4
R4050	E-4
R4051	E-5
R4052	E-4
R4059	E-6
R4060	E-6
R4061	C-7
R4062	C-8
R4063	C-7
R4064	C-7
R4065	C-8
R4066	C-8
R4067	C-7
R4068	C-7
R4069	C-8
R4070	C-8
R4071	C-8
R4072	C-8
R4901	A-7
R4903	B-7
R7401	B-3
R7402	D-5
R7403	D-5
R7442	E-5
R7443	E-5
R7444	F-5
R7445	E-5
R7446	E-5
R7503	E-2
R7504	E-3
R7505	E-2
R7506	E-3
R7507	E-3
R7508	E-3
R7510	D-2
R7511	F-4
R7515	E-3
R7516	E-2
R7517	D-3
R7518	E-2
R7519	E-2
R7520	E-2
R7521	E-2
R7522	D-3
R7523	D-3
R7524	D-3
R7525	D-3
R7526	D-3
R7527	D-3
R7528	D-3
R7529	D-3
R7530	D-3
R7531	D-3
R7532	D-3
R7533	D-3
R7534	D-3
R7535	D-4
R7536	D-4
R7537	D-4
R7538	D-4
R7539	D-4
R7540	D-4
R7542	D-4
R7543	D-4
R7544	D-4
R7545	D-4
R7546	E-4
R7548	D-4
R7549	D-4
R7550	E-4
R7552	E-2
R7553	E-2
R7554	E-2
R7555	F-2
R7556	F-2
R7557	E-2
R7558	E-2
R7559	F-2
R7562	D-4
R7563	D-5
R7564	D-4
R7565	F-4
R7566	F-5
R7567	F-4
R7568	F-5
R7569	D-4
R7570	E-4
R7581	C-4
R7582	D-4
R7583	E-2
R7584	E-2
R7591	C-2
R7594	C-2
R7597	C-2
R7600	E-1
R7601	E-1
R7602	D-1
R7603	E-1
R7604	E-1
R7605	E-1
R7606	F-1
R7607	C-2
R7608	E-4
R7614	C-3
R7615	C-3
R7616	C-4
R7617	D-4
R7618	D-4
R7619	D-4
R7621	D-2
R8001	A-7
R8002	A-7
R8003	A-6
R8004	A-7
R8005	A-7
R8006	A-6
R8009	A-6
R8010	A-6
R8012	A-6
R8013	A-6
R8016	A-6
R8017	A-7
R8018	A-7
R8019	A-6
R8021	A-6
R8023	A-7
R8024	A-6
R8028	A-7
R8029	A-7
R8030	A-8
R8031	A-8
R8035	A-7
R8036	A-7
Transformer	
T7501	E-2

21.3. Tuner P.C.B.

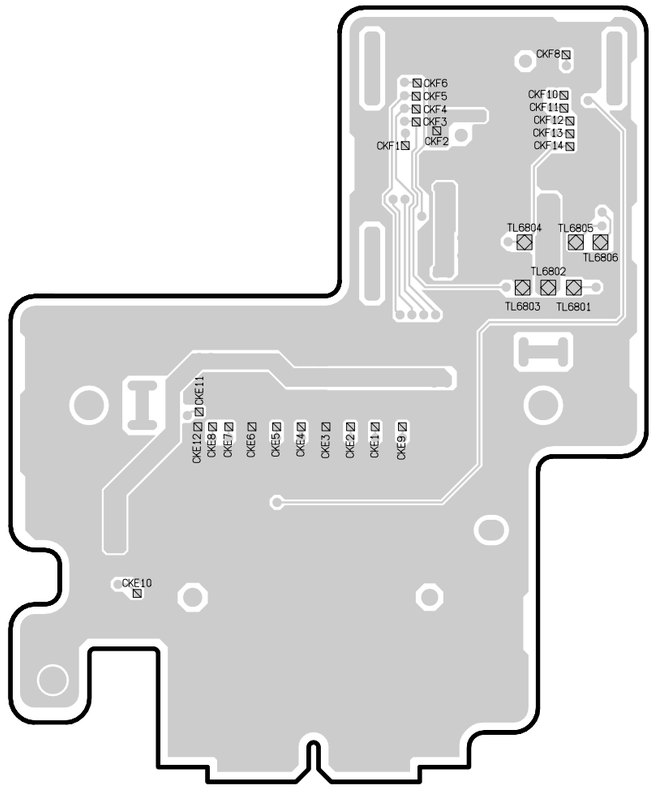
Tuner P.C.B.



DMR-EH60PC/PL/GT
Tuner P.C.B.
(VEP07A76B)

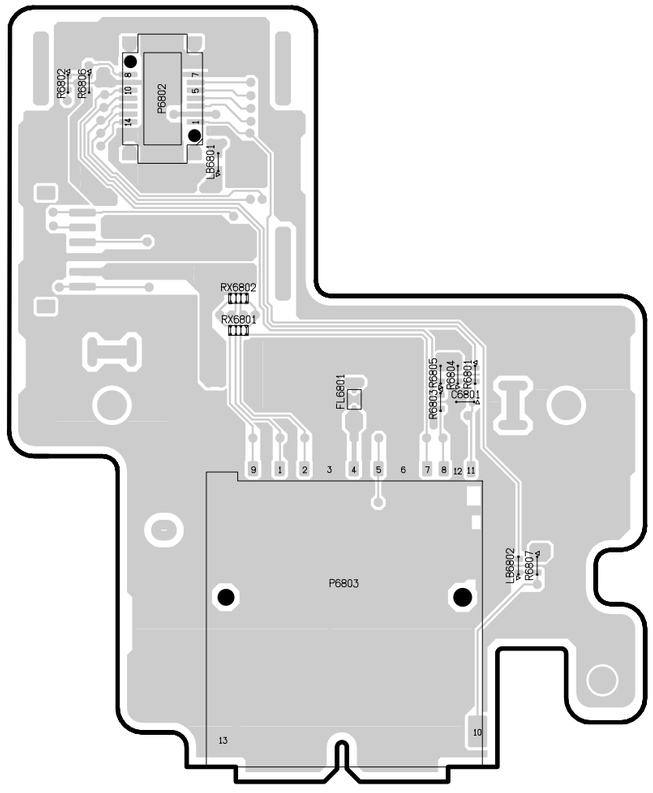
21.4. SD Card P.C.B.

SD Card P.C.B.



(Component Side)

DMR-EH60PC/PL/GT
SD Card P.C.B. (Component Side)
(VEP73121B)

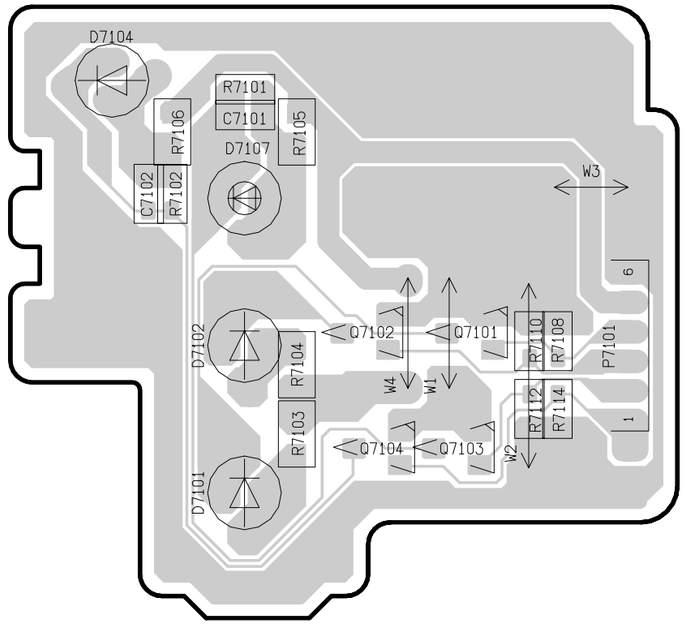


(Foil Side)

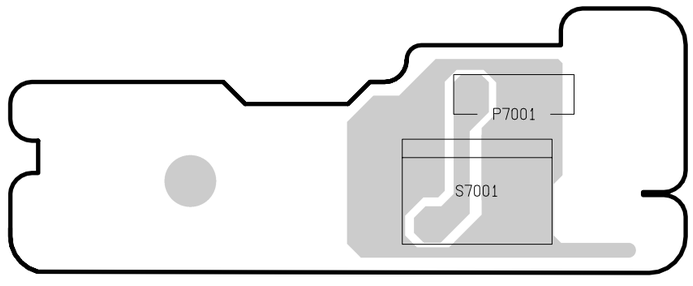
DMR-EH60PC/PL/GT
SD Card P.C.B. (Foil Side)
(VEP73121B)

21.5. LED P.C.B. , Front (L), DV Jack P.C.B.

LED P.C.B.

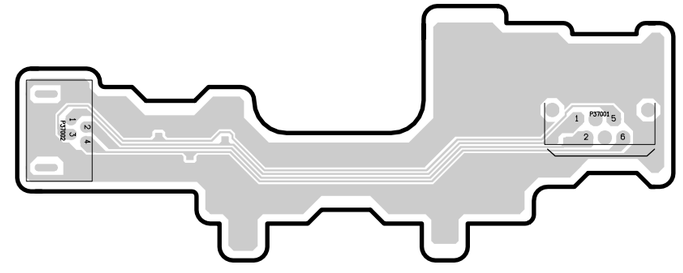


Front (L) P.C.B.



DMR-EH60PC/PL/GT
LED P.C.B. (VEP70122)
Front (L) P.C.B. (VEP70121A)

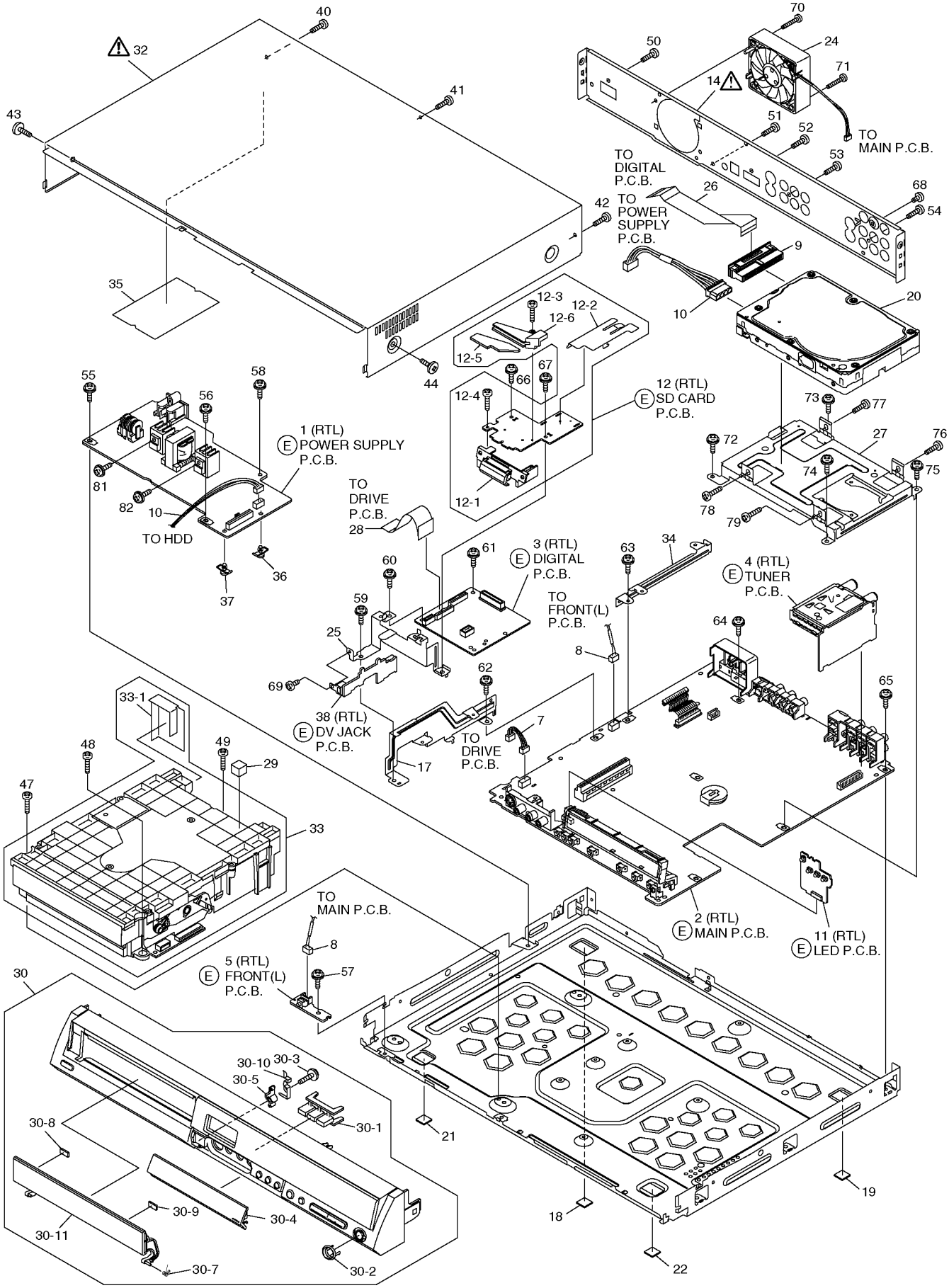
DV Jack P.C.B.



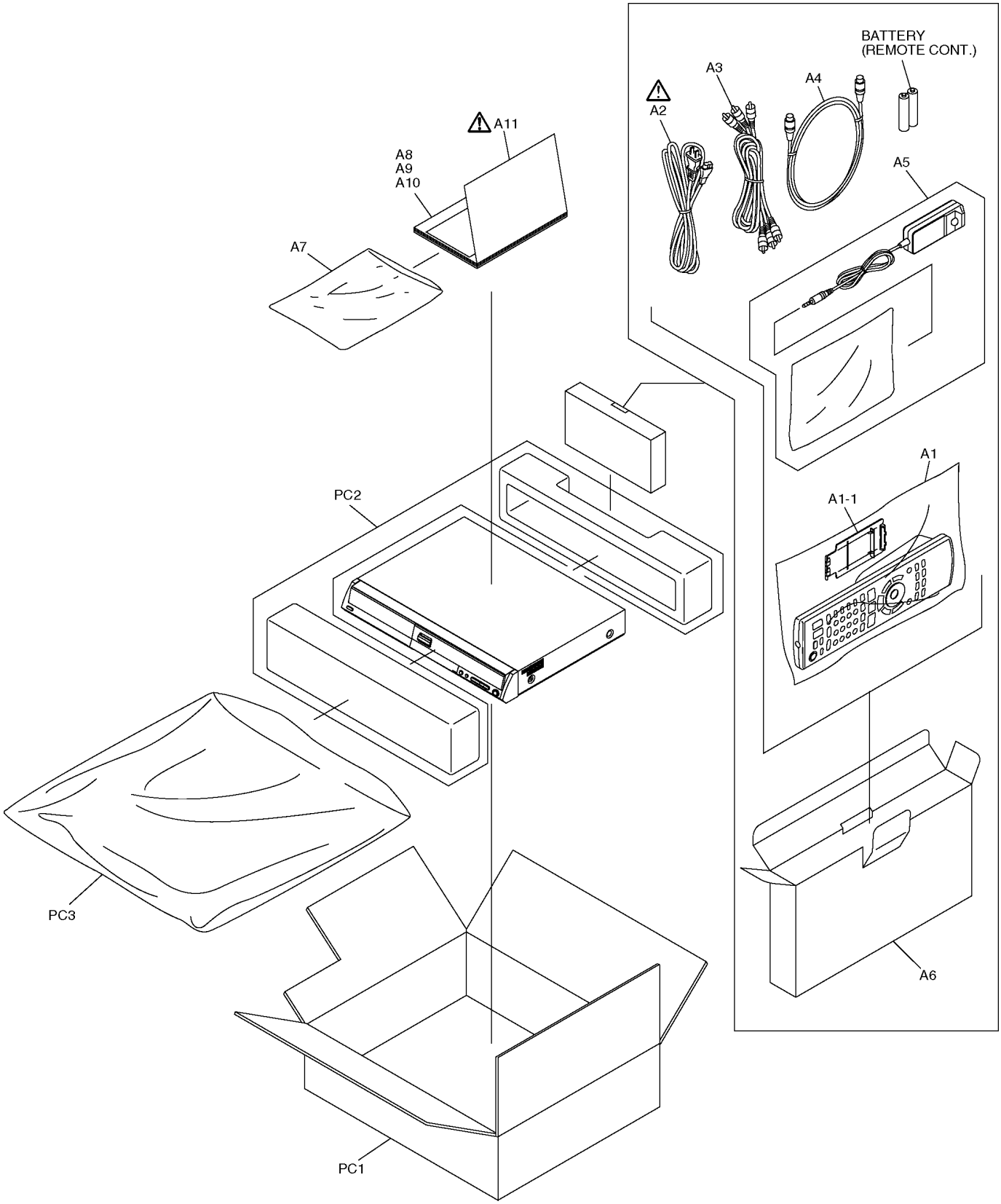
DMR-EH60PC/PL/GT
DV JACK P.C.B.
(VEP73132A)

22 Exploded Views

22.1. Casing Parts & Mechanism Section



22.2. Packing & Accessories Section



23 Replacement Parts List

Notes:

*Important safety notice:

Components identified by ⚠ mark have special characteristics important for safety.

Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.

When replacing any of components, be sure to use only manufactures specified parts shown in the parts list.

*Warning: This product uses a laser diode. Refer to caution statements.

*Capacity values are in microfarads (μF) unless specified otherwise, P=Pico-farads (pF), F=Farads (F).

*Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM).

*The marking (RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.

*"(IA)-(ID)", marks in Remarks indicate languages of instruction manuals. [(IA): English, (IB): Canadian French, (IC): Chinese, (ID): Spanish].

*All parts except parts mentioned [SPC] in the Remarks column are supplied from PAVC SG.

*Parts mentioned [SPC] are supplied from PAVC.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
n	01	CASING/ACCESSORY/PACKING	1	(RTL)
1	VEP01967A	POWER SUPPLY P.C.B.	1	(RTL) (PC) (PL)
1	VEP01973A	POWER SUPPLY P.C.B.	1	(RTL) (GT)
2	VEP79111G	MAIN P.C.B.	1	(RTL) (GT) (PL)
2	VEP79111F	MAIN P.C.B.	1	(RTL) (PC)
3	VEP79108A	DIGITAL P.C.B.	1	(RTL) (PC)
3	VEP79108AC	DIGITAL P.C.B.	1	(RTL) (PL)
3	VEP79108AB	DIGITAL P.C.B.	1	(RTL) (GT)
4	VEP07A76B	TUNER P.C.B.	1	(RTL)
5	VEP70121A	FRONT(L)P.C.B.	1	(RTL)
7	VEE1A60	WIRE WITH CONNECTOR(4P)	1	
8	VEE1A61	WIRE WITH CONNECTOR(2P)	1	
9	K1MZ40Z00002	HDD CONNECTOR	1	
10	VEE1A71	HDD CABLE(4P)	1	
11	VEP70122	LED P.C.B.	1	(RTL)
12	VEP73121B	SD CARD P.C.B.	1	(RTL)
12-1	RYQ0556A-S1	CARD HOLDER ASS'Y	1	
12-2	RMV0298	FFC HOLDER	1	
12-3	XTN2+8GFJ	SCREW	1	
12-4	XTN2+8GFJ	SCREW	1	
12-5	RGL0677-Q	SD PANEL LIGHT	1	
12-6	RMR1697-W	SD REFLECTOR	1	
14	RGR0354K-D1	REAR PANEL	1	(PC) ⚠
14	RGR0354J-B	REAR PANEL	1	(PL) ⚠
14	RGR0354J-A	REAR PANEL	1	(GT) ⚠
17	RMA1909A-1	DIGITAL ANGLE	1	
18	RKA0177-K	LEG CUSHION	1	
19	RKA0177-K	LEG CUSHION	1	
20	RFKV0046HDK	HDD 200GB	1	
21	RKA0166-T	LEG RUBBER	1	
22	RKA0166-T	LEG RUBBER	1	
24	L6FAKCCE0003	FAN MOTOR	1	
25	RMA1910A-1	SD CARD ANGLE	1	
26	VEK0H70	FFC	1	
27	RMN0823-2	HDD BRACKET	1	
28	VEK0H71	FFC	1	
29	RMX0325	MECHA SPACER	1	
30	RYP1269H-S2	FRONT PANEL ASS'Y	1	(PC)
30	RYP1269S-S1	FRONT PANEL ASS'Y	1	(GT) (PL)
30-1	RGL0678-Q	PANEL LIGHT	1	
30-2	RGK1885-S	REC BUTTON RING	1	
30-3	RHD26045	SCREW	1	
30-4	RKF0729H-S	PANEL DOOR	1	
30-5	RMR1698-S	SHAFT HOLDER	1	
30-7	VMB3410	TRAY SPRING	1	
30-8	RMX0302	DOOR DAMPER	1	
30-9	RMX0302	DOOR DAMPER	1	
30-10	RMC0660	MIRROR EARTH	1	
30-11	RKF0730-S	TRAY DOOR	1	
32	RKM0532A-S	TOP CASE	1	⚠
33	RFKNVXY1872	RAM DRIVE UNIT	1	(RTL) (SPC)
33-1	RMV0307	BARRIER	1	
34	RMA1913	POWER P.C.B. ANGLE	1	
35	RMV0302	BARRIER	1	
36	RMX0323	PCB SPACER	1	
37	RMX0323	PCB SPACER	1	
38	VEP73132A	DV JACK P.C.B.	1	(RTL)
40	RHD30119-S	SCREW	1	
41	RHD30119-S	SCREW	1	
42	RHD30119-S	SCREW	1	
43	RHD30113	SCREW	1	
44	RHD30113	SCREW	1	
47	RHD30115	SCREW	1	
48	RHD30115	SCREW	1	
49	RHD30115	SCREW	1	
50	RHD30119-S	SCREW	1	
51	RHD30119-S	SCREW	1	
52	RHD30119-S	SCREW	1	
53	RHD30119-S	SCREW	1	
54	RHD30119-S	SCREW	1	
55	RHDX30005-1	SCREW	1	
56	RHDX30005-1	SCREW	1	
57	RHDX30005-1	SCREW	1	
58	RHDX30005-1	SCREW	1	
59	RHDX30005-1	SCREW	1	
60	RHDX30005-1	SCREW	1	
61	RHDX30005-1	SCREW	1	
62	RHDX30005-1	SCREW	1	
63	RHDX30005-1	SCREW	1	
64	RHDX30005-1	SCREW	1	
65	RHDX30005-1	SCREW	1	
66	RHDX30005-1	SCREW	1	
67	RHDX30005-1	SCREW	1	
68	XSN3+4FJ	SCREW	1	
69	XSN3+4FJ	SCREW	1	
70	XTB3+25JFJ	SCREW	1	
71	XTB3+25JFJ	SCREW	1	
72	RHD30111	SCREW	1	
73	RHD30111	SCREW	1	
74	RHD30111	SCREW	1	
75	RHD30111	SCREW	1	
76	RHD32001	SCREW	1	
77	RHD32001	SCREW	1	
78	RHD32001	SCREW	1	
79	RHD32001	SCREW	1	
81	XYN3+F8FJ	SCREW	1	
82	XYN3+F8FJ	SCREW	1	
A1	EUR7729KP0	REMOTE CONTROL ASS'Y	1	(PL) (GT)
A1	EUR7729KB0	REMOTE CONTROL ASS'Y	1	(PC)
A1-1	UR77EC2903A	BATTERY COVER	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
A2	K2CB2CB00018	AC CORD	1	(PC)(PL) ⚠
A2	K2CA2CA00027	AC CORD	1	(GT) ⚠
A3	K2KA6BA00003	AV CORD	1	
A4	K2KZ2BA00001	RF COAXIAL CABLE	1	
A5	K2ZZ04C00001	IR BLUSTER	1	(PC)
A6	RPQF0220-1	ACCESSORY CASE	1	
A7	RPFX0067-1	POLYETHYLENE BAG(F.B)	1	
A8	RQCA1383	SET-UP GUIDE	1	(PC)
A8	RQCA1384	SET-UP GUIDE	1	(PC)
A9	RQCA1395	CARD CAUTION SHEET	1	
A10	RQCC2705	DVD MEDIA SHEET	1	(GT)
A11	RQT8307-P	OPERATING INSTRUCTIONS	1	(IA)(PC) ⚠
A11	RQT8135-C	OPERATING INSTRUCTIONS	1	(IB)(PC) ⚠
A11	RQT8136-K	OPERATING INSTRUCTIONS	1	(IC)(GT) ⚠
A11	RQT8166-M	OPERATING INSTRUCTIONS	1	(ID)(PL) ⚠
F1101	K5D202BK0005	FUSE	1	⚠
PC1	RPG7637	PACKING CASE	1	(PC)
PC1	RPG7656	PACKING CASE	1	(PL)
PC1	RPG7643	PACKING CASE	1	(GT)
PC2	RPN1828	CUSHION	1	
PC3	RPFX0058-1	MIRAMAT BAG	1	
n	02	VEP79111F/G	1	(MAIN P.C.B.)
B7501	N4BCT50A0005	BATTERY	1	
C1503	F2A1A2210063	10V 220U	1	
C1504	F2A1E1010067	25V 100U	1	
C1505	F1J0J106A014	6.3V 10U	1	
C1507	F2A1A101A389	10V 100U	1	
C1508	ECJ1VB1H103K	50V 0.01U	1	
C1509	ECJ1VB0J105K	6.3V 1U	1	
C1510	ECJ1VB1A105K	10V 1U	1	
C1511	ECJ1VB0J105K	6.3V 1U	1	
C1512	ECJ1VB0J105K	6.3V 1U	1	
C1515	F2A1A470A388	10V 47U	1	
C1516	F2A1A470A388	10V 47U	1	
C1517	ECJ1VC1H331J	50V 330P	1	
C1518	F2A0J681A550	6.3V 680U	1	
C1526	F2A1A470A388	10V 47U	1	
C1535	ECJ1VB1A105K	10V 1U	1	
C1536	ECJ1VB0J105K	6.3V 1U	1	
C1538	ECJ1VB1A105K	10V 1U	1	
C1539	ECJ1VB0J105K	6.3V 1U	1	
C1540	ECJ1VB1H103K	50V 0.01U	1	
C1544	ECJ1VB1H103K	50V 0.01U	1	
C1551	ECJ1VB1H103K	50V 0.01U	1	
C1552	ECJ1VB1A105K	10V 1U	1	
C1553	ECJ1VB0J105K	6.3V 1U	1	
C1562	ECJ1VB1E223K	25V 0.022U	1	
C3001	ECJ1VC1H561J	50V 560P	1	
C3005	ECJ1VB1C333K	16V 0.033U	1	
C3006	ECJ1VB1C104K	16V 0.1U	1	
C3007	ECJ1VB1C104K	16V 0.1U	1	
C3008	ECJ1VB1C104K	16V 0.1U	1	
C3010	ECJ1VB1H103K	50V 0.01U	1	
C3011	ECJ1VB1H103K	50V 0.01U	1	
C3012	ECJ1VB1H103K	50V 0.01U	1	
C3013	ECJ1VB1H103K	50V 0.01U	1	
C3014	ECJ1VB1H103K	50V 0.01U	1	
C3015	ECJ1VB1H103K	50V 0.01U	1	
C3016	ECJ1VB1H103K	50V 0.01U	1	
C3017	ECJ1VB1H103K	50V 0.01U	1	
C3018	F2A1E4700051	25V 47U	1	
C3019	ECJ1VB1H103K	50V 0.01U	1	
C3020	ECJ1VB1H103K	50V 0.01U	1	
C3021	ECJ1VB1H103K	50V 0.01U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3022	F2A1A471A224	10V 470U	1	
C3023	F2A1E4700051	25V 47U	1	
C3024	F2A0J3310037	6.3V 330U	1	
C3026	F2A0J3310037	6.3V 330U	1	
C3028	F2A1E4700051	25V 47U	1	
C3029	F2A1A471A224	10V 470U	1	
C3030	F2A1E4700051	25V 47U	1	
C3031	F2A1A471A224	10V 470U	1	
C3032	ECJ1VB1H103K	50V 0.01U	1	
C3033	ECJ1VB1H103K	50V 0.01U	1	
C3034	ECJ1VB1H103K	50V 0.01U	1	
C3035	F2A1H2200032	50V 22U	1	
C3036	F2A1H100A150	50V 10U	1	
C3037	ECJ1VB1C104K	16V 0.1U	1	
C3038	F2J1C4700005	16V 47U	1	
C3039	ECJ1VB1C104K	16V 0.1U	1	
C3040	ECJ1VB1H103K	50V 0.01U	1	
C3041	ECJ1VB1C104K	16V 0.1U	1	
C3042	F2J1C4700005	16V 47U	1	
C3043	ECJ1VB1H103K	50V 0.01U	1	
C3044	F2A1E4700051	25V 47U	1	
C3046	ECJ1VB1H103K	50V 0.01U	1	
C3047	ECJ1VB1H103K	50V 0.01U	1	
C3901	ECJ1VB1C104K	16V 0.1U	1	
C3902	ECJ1VB1H103K	50V 0.01U	1	
C3909	ECJ1VB1H103K	50V 0.01U	1	
C3910	ECJ1VB1C104K	16V 0.1U	1	
C3911	ECJ1VB1C104K	16V 0.1U	1	
C3912	ECJ1VB1H103K	50V 0.01U	1	
C3917	ECJ1VB1H103K	50V 0.01U	1	
C3918	ECJ1VB1H103K	50V 0.01U	1	
C4001	ECJ1VB1C105K	16V 1U	1	
C4002	ECJ1VB1C105K	16V 1U	1	
C4003	F2A1H1R00103	50V 1U	1	
C4004	F2A1H1R00103	50V 1U	1	
C4005	F2A1H1R00103	50V 1U	1	
C4006	F2A1H1R00103	50V 1U	1	
C4009	ECJ1VF1C104Z	16V 0.1U	1	
C4010	ECJ1VF1C104Z	16V 0.1U	1	
C4011	ECJ2VB1E104K	25V 0.1U	1	
C4016	F2A1E221A217	25V 220U	1	
C4017	ECJ1VC1H560J	50V 56P	1	
C4019	ECJ1VC1H560J	50V 56P	1	
C4022	ECJ1VF1C104Z	16V 0.1U	1	
C4023	F2A1C471A250	16V 470U	1	
C4024	F2A1E4700051	25V 47U	1	
C4025	F2A1E4700051	25V 47U	1	
C4026	F2A1H1R00103	50V 1U	1	
C4027	F2A1H1R00103	50V 1U	1	
C4028	F2A1J1500001	63V 15U	1	
C4029	F2A1J1500001	63V 15U	1	
C4036	F2A1E4700051	25V 47U	1	
C4038	F2A1E4700051	25V 47U	1	
C4039	ECJ2VC1H102J	50V 1000P	1	
C4040	ECJ2VC1H102J	50V 1000P	1	
C4041	ECJ2VC1H102J	50V 1000P	1	
C4042	ECJ2VC1H102J	50V 1000P	1	
C4045	ECJ1VF1C104Z	16V 0.1U	1	
C4046	ECJ1VF1C104Z	16V 0.1U	1	
C4047	ECQV1H104JL3	50V 0.1U	1	
C4049	F2A1A471A224	10V 470U	1	
C4050	ECQV1H104JL3	50V 0.1U	1	
C4052	F2A1C471A250	16V 470U	1	
C4901	F2A0J470A599	6.3V 47U	1	
C4902	ECJ1VF1C104Z	16V 0.1U	1	
C4903	F2A0J470A599	6.3V 47U	1	
C4904	ECJ1VF1C104Z	16V 0.1U	1	
C4906	ECJ1VC1H220J	50V 22P	1	
C7101	ECJ1VB1H103K	50V 0.01U	1	
C7102	ECJ1VB1H103K	50V 0.01U	1	
C7406	ECJ1VB1C104K	16V 0.1U	1	
C7407	ECJ1VB1C104K	16V 0.1U	1	
C7436	ECJ1VB1C104K	16V 0.1U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C7437	F2A0J470A012	6.3V 47U	1	
C7502	F1J0J475A008	6.3V 4.7U	1	
C7503	ECJ1VB1C104K	16V 0.1U	1	
C7504	ECJ1VF1C104Z	16V 0.1U	1	
C7505	ECJ1VB1C104K	16V 0.1U	1	
C7506	ECJ1VC1H101J	50V 100P	1	
C7507	ECJ1VF1C104Z	16V 0.1U	1	
C7508	ECJ1VB1C104K	16V 0.1U	1	
C7509	ECJ1VF1H104Z	50V 0.1U	1	
C7510	ECJ1VF1C104Z	16V 0.1U	1	
C7513	ECJ1VB1H103K	50V 0.01U	1	
C7514	ECJ1VB1H103K	50V 0.01U	1	
C7515	ECJ1VB1H103K	50V 0.01U	1	
C7516	ECJ1VC1H101J	50V 100P	1	
C7517	ECJ1VF1C104Z	16V 0.1U	1	
C7518	F1J0J475A008	6.3V 4.7U	1	
C7519	ECJ1VC1H150J	50V 15P	1	
C7520	ECJ1VC1H220J	50V 22P	1	
C7521	ECJ1VC1H180J	50V 18P	1	
C7522	ECJ1VC1H180J	50V 18P	1	
C7523	ECJ1VC1H470J	50V 47P	1	
C7524	ECJ1VB1H103K	50V 0.01U	1	
C7525	ECJ1VC1H470J	50V 47P	1	
C7526	ECJ1VB1C104K	16V 0.1U	1	
C7527	ECJ1VC1H470J	50V 47P	1	
C7528	ECJ1VB1C104K	16V 0.1U	1	
C7529	ECJ1VF1C104Z	16V 0.1U	1	
C7530	ECJ1VF1A105Z	10V 1U	1	
C7532	ECJ1VC1H100D	50V 10P	1	
C7533	ECJ1VC1H100D	50V 10P	1	
C7534	ECJ1VB1C104K	16V 0.1U	1	
C7535	ECJ1VC1H101J	50V 100P	1	
C7536	ECJ1VC1H101J	50V 100P	1	
C7537	ECJ1VC1H101J	50V 100P	1	
C7538	ECJ1VB1H103K	50V 0.01U	1	
C7539	ECJ1VB1H103K	50V 0.01U	1	
C7540	ECJ1VF1C104Z	16V 0.1U	1	
C7542	ECJ1VB1H103K	50V 0.01U	1	
C7543	F2A1V470A533	35V 47U	1	
C7544	F2A1H2200032	50V 22U	1	
C7547	F2A1E2210050	25V 220U	1	
C7548	ECQB1H473KF3	50V 0.047U	1	
C7549	F2A1A2210063	10V 220U	1	
C7550	F2A1H5600009	50V 56U	1	
C7551	ECQB1H222KF3	50V 2200P	1	
C7552	F2A1H2200032	50V 22U	1	
C7554	ECJ1VB1H103K	50V 0.01U	1	
C7559	ECJ1VF1A105Z	10V 1U	1	
C7560	ECJ1VB1H103K	50V 0.01U	1	
C7561	ECJ1VF1C104Z	16V 0.1U	1	
C7567	ERJ3GEY0R00V	1/10W 0	1	
C7568	F2A0J471A574	6.3V 470U	1	
C7569	ECJ2FF1A106Z	10V 10U	1	
C8001	ECJ1VC1H220J	50V 22P	1	
C8002	ECJ1VC1H220J	50V 22P	1	
C8003	ECJ1VB1C104K	16V 0.1U	1	
C8004	ECJ1VC1H101J	50V 100P	1	
C8006	ECJ1VB1C104K	16V 0.1U	1	
C8007	ECJ1VB1C104K	16V 0.1U	1	
C8008	ECJ1VB1C104K	16V 0.1U	1	
C8010	ECJ1VC1H101J	50V 100P	1	
C8013	ECJ1VF1A105Z	10V 1U	1	
D1501	MA2C165001VT	DIODE	1	
D4001	MA3Z142D0LG	DIODE	1	
D4002	MA3Z142D0LG	DIODE	1	
D7101	B3ABA0000595	DIODE	1	
D7102	B3ACA0000265	DIODE	1	
D7104	B3AEA0000060	DIODE	1	
D7107	B3AEA0000068	DIODE	1	
D7401	B0JACE000001	DIODE	1	
D7502	MAZ4240NMF	DIODE	1	
D7503	B0HAGR000002	DIODE	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
D7504	B0AAGM000007	DIODE	1	
D7505	B0AADM000003	DIODE	1	
D7506	B0AADM000003	DIODE	1	
D7507	MAZ4300NLF	DIODE	1	
D7508	B0JACE000001	DIODE	1	
D7509	B0JDCE000002	DIODE	1	
D7511	B0BA03600021	DIODE	1	
DP7501	A2BD00000099	FL DISPLAY TUBE	1	
IC1501	C0CBCDD00006	IC	1	
IC1502	C0CBCBD00018	IC	1	
IC1504	C0CBCYH00003	IC	1	
IC1510	C0CBCDD00006	IC	1	
IC1511	C0CBCDD00008	IC	1	
IC1512	C0CBCDD00006	IC	1	
IC3001	C1AB00001979	IC	1	
IC4001	C1AB00001920	IC	1	
IC4004	C0DBAHD00013	IC	1	
IC4005	C0CBCDC00027	IC	1	
IC7404	C0BBBA000085	IC	1	
IC7501	C1ZBZ0002791	IC	1	
IC7502	C0EBJ0000336	IC	1	
IC7503	C0EBE0000457	IC	1	
IC7504	C0ABBA000146	IC	1	
IC7505	C2CBJG000658	IC	1	
IC8001	C2BBFD000536	IC	1	
IC8002	C0EBE0000504	IC	1	
IP1501	K5H302100004	IC PROTECTOR	1	⚠
IP7501	K5H7512A0010	IC PROTECTOR	1	⚠
IR7501	B3RAD0000092	REMOTE SENSOR	1	
JK3901	K1U822B00003	JACK	1	
JK3902	K1U820B00003	JACK	1	
JK3903	K1U407B00004	JACK	1	
JK3904	K1U415B00001	JACK	1	
JK8001	K2HC104B0013	JACK	1	(PC)
K7404	ERJ3GEY0R00V	1/10W 0	1	
K7413	ERJ3GEY0R00V	1/10W 0	1	
K7502	ERJ3GEY0R00V	1/10W 0	1	
K7505	ERJ3GEY0R00V	1/10W 0	1	
K7509	ERJ3GEY0R00V	1/10W 0	1	
K7513	ERJ3GEY0R00V	1/10W 0	1	
K7514	ERJ3GEY0R00V	1/10W 0	1	
K7516	ERJ3GEY0R00V	1/10W 0	1	
K7517	ERJ3GEY0R00V	1/10W 0	1	
K7518	ERJ3GEY0R00V	1/10W 0	1	
K7702	ERJ6GEY0R00V	1/8W 0	1	
L1501	G0A220GA0026	COIL 22UH	1	
L3001	G0C220JA0019	COIL 22UH	1	
L3002	G0C220JA0019	COIL 22UH	1	
L4901	G0C220JA0055	COIL	1	
L7502	G0C390JA0055	COIL 39UH	1	
LB1503	J0JKB0000003	COIL	1	
LB1504	J0JKB0000003	COIL	1	
LB1505	J0JKB0000003	COIL	1	
LB1506	J0JKB0000003	COIL	1	
LB3905	J0JCC0000103	COIL	1	
LB3906	J0JCC0000103	COIL	1	
LB3907	J0JCC0000103	COIL	1	
LB3908	J0JCC0000103	COIL	1	
LB3909	J0JCC0000103	COIL	1	
LB3910	J0JCC0000103	COIL	1	
LB3915	J0JCC0000103	COIL	1	
LB3916	J0JCC0000103	COIL	1	
LB3917	J0JCC0000103	COIL	1	
LB3918	J0JCC0000103	COIL	1	
LB3919	J0JCC0000103	COIL	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
LB3920	J0JCC0000103	COIL	1	
LB3924	J0JCC0000103	COIL	1	
LB3925	J0JCC0000103	COIL	1	
LB3926	J0JCC0000103	COIL	1	
LB3927	J0JCC0000103	COIL	1	
LB3928	J0JCC0000103	COIL	1	
LB3929	J0JCC0000103	COIL	1	
LB4903	J0JCC0000103	COIL	1	
LB4904	J0JCC0000103	COIL	1	
LB4905	J0JCC0000103	COIL	1	
LB4906	J0JCC0000103	COIL	1	
LB4907	J0JCC0000103	COIL	1	
LB4908	J0JCC0000103	COIL	1	
LB4909	J0JCC0000103	COIL	1	
LB4910	J0JCC0000103	COIL	1	
LB4911	J0JCC0000103	COIL	1	
LB4912	J0JCC0000103	COIL	1	
LB7402	J0JKB0000003	COIL	1	
LB7403	J0JKB0000003	COIL	1	
LB7409	J0JHC0000032	COIL	1	
LB7410	J0JHC0000032	COIL	1	
LB7411	ERJ3GEY0R00V	1/10W 0	1	
LB7412	ERJ3GEY0R00V	1/10W 0	1	
LB7501	ERJ3GEY0R00V	1/10W 0	1	
LB7502	ERJ3GEY0R00V	1/10W 0	1	
LB7503	ERJ3GEY0R00V	1/10W 0	1	
LB7504	J0JCC0000060	COIL	1	
LB7506	J0JGC0000020	COIL	1	
LB7507	J0JCC0000103	COIL	1	
LB7508	J0JCC0000103	COIL	1	
LB8001	J0JHC0000032	COIL	1	
P1501	K1KA23A00003	CONNECTOR(23P)	1	
P1502	K1KA04AA0192	CONNECTOR(4P)	1	
P7001	K1KA03AA0301	CONNECTOR(3P)	1	
P7101	K1KB06B00024	CONNECTOR(6P)	1	
P7401	K1KA88A00002	CONNECTOR(88P)	1	
P7504	K1KA03AA0301	CONNECTOR(3P)	1	
P7505	K1KA03AA0301	CONNECTOR(3P)	1	
P7506	K1KA06AA0288	CONNECTOR(6P)	1	
PP7404	K1KA13AA0288	CONNECTOR(6P)	1	
Q4001	2SB1218A0L	TRANSISTOR	1	
Q4002	2SD132800L	TRANSISTOR	1	
Q4003	2SD132800L	TRANSISTOR	1	
Q4004	2SD132800L	TRANSISTOR	1	
Q4005	2SD132800L	TRANSISTOR	1	
Q7101	2SD0601A0L	TRANSISTOR	1	
Q7102	2SD0601A0L	TRANSISTOR	1	
Q7103	2SD0601A0L	TRANSISTOR	1	
Q7104	2SD0601A0L	TRANSISTOR	1	
Q7503	2SB0709A0L	TRANSISTOR	1	
Q7504	2SD1819A0L	TRANSISTOR	1	
Q7506	2SD132800L	TRANSISTOR	1	
Q7507	2SD1994BR1VT	TRANSISTOR	1	
Q7508	2SD0601A0L	TRANSISTOR	1	
Q7509	B1ABMD000004	TRANSISTOR	1	
Q8001	2SD0601A0L	TRANSISTOR	1	
Q8002	2SD0601A0L	TRANSISTOR	1	
Q8003	2SD0601A0L	TRANSISTOR	1	
Q8004	2SD132800L	TRANSISTOR	1	
Q8005	2SB0710A0L	TRANSISTOR	1	
QR4001	UNR521100L	TRANSISTOR	1	
QR4002	UNR521100L	TRANSISTOR	1	
QR4003	UNR521100L	TRANSISTOR	1	
QR4004	UNR521100L	TRANSISTOR	1	
QR7502	UNR511300L	TRANSISTOR	1	
QR7503	UNR521200L	TRANSISTOR	1	
R1503	ERJ3GEYJ332V	1/10W 3.3K	1	
R1504	ERJ3GEYJ101V	1/10W 100	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R1506	ERJ3RBD103V	1/16W 10K	1	
R1507	ERJ3RBD152V	1/16W 1.5K	1	
R1508	ERJ3RBD153V	1/16W 15K	1	
R1511	ERDS2TJ271T	1/4W 270	1	
R1512	ERDS2TJ271T	1/4W 270	1	
R1513	ERDS2TJ271T	1/4W 270	1	
R1523	ERJ3GEYJ822V	1/10W 8.2K	1	
R3005	ERJ3GEY0R00V	1/10W 0	1	
R3025	ERJ3RBD153V	1/16W 15K	1	
R3026	ERJ3GEYJ105V	1/10W 1M	1	
R3028	ERJ3GEYJ471V	1/10W 470	1	
R3030	ERJ3GEYJ750V	1/10W 75	1	
R3032	ERJ3GEYJ103V	1/10W 10K	1	
R3033	ERJ3GEYJ103V	1/10W 10K	1	
R3036	ERJ3GEYJ103V	1/10W 10K	1	
R3039	ERJ3GEYJ221V	1/10W 220	1	
R3040	ERJ3GEYJ221V	1/10W 220	1	
R3041	ERJ3RBD104V	1/16W 100K	1	
R3901	ERJ3GEYJ750V	1/10W 75	1	
R3902	ERJ3GEYJ750V	1/10W 75	1	
R3903	ERJ3GEYJ102V	1/10W 1K	1	
R3904	ERJ3GEYJ750V	1/10W 75	1	
R3905	ERJ3GEYJ750V	1/10W 75	1	
R3906	ERJ3GEYJ102V	1/10W 1K	1	
R3907	ERJ3GEYJ750V	1/10W 75	1	
R3908	ERJ3GEYJ750V	1/10W 75	1	
R3909	ERJ3GEYJ750V	1/10W 75	1	
R3910	ERJ3GEYJ750V	1/10W 75	1	
R3911	ERJ3GEYJ750V	1/10W 75	1	
R3912	ERJ3GEYJ750V	1/10W 75	1	
R3913	ERJ3GEYJ750V	1/10W 75	1	
R3914	ERJ3GEYJ750V	1/10W 75	1	
R3915	ERJ3GEYJ912V	1/10W 9.1K	1	
R3916	ERJ3GEYJ912V	1/10W 9.1K	1	
R3923	ERJ3GEYJ750V	1/10W 75	1	
R3924	ERJ3GEYJ750V	1/10W 75	1	
R3925	ERJ3GEYJ750V	1/10W 75	1	
R3926	ERJ3GEYJ102V	1/10W 1K	1	
R3927	ERJ3GEYJ750V	1/10W 75	1	
R3928	ERJ3GEYJ750V	1/10W 75	1	
R3929	ERJ3GEYJ750V	1/10W 75	1	
R4001	ERJ3GEYJ104V	1/10W 100K	1	
R4002	ERJ3GEYJ104V	1/10W 100K	1	
R4003	ERJ3GEYJ104V	1/10W 100K	1	
R4004	ERJ3GEYJ104V	1/10W 100K	1	
R4010	ERJ3GEY0R00V	1/10W 0	1	
R4011	ERJ6GEYJ102V	1/8W 1K	1	
R4012	ERJ6GEYJ102V	1/8W 1K	1	
R4013	ERJ6GEYJ102V	1/8W 1K	1	
R4014	ERJ6GEYJ102V	1/8W 1K	1	
R4015	ERJ3GEYJ104V	1/10W 100K	1	
R4016	ERJ3GEYJ104V	1/10W 100K	1	
R4024	ERJ3GEYJ101V	1/10W 100	1	
R4025	ERJ3GEYJ101V	1/10W 100	1	
R4026	ERJ3RBD153V	1/16W 15K	1	
R4027	ERJ3RBD103V	1/16W 10K	1	
R4028	ERJ3RBD153V	1/16W 15K	1	
R4029	ERJ3RBD103V	1/16W 10K	1	
R4031	ERJ6GEYJ102V	1/8W 1K	1	
R4032	ERJ6GEYJ102V	1/8W 1K	1	
R4037	ERJ3GEYJ104V	1/10W 100K	1	
R4038	ERJ3GEYJ104V	1/10W 100K	1	
R4043	ERJ3RBD392V	1/16W 3.9K	1	
R4044	ERJ3RBD392V	1/16W 3.9K	1	
R4045	ERJ3RBD622V	1/16W 6.2K	1	
R4046	ERJ3RBD622V	1/16W 6.2K	1	
R4049	ERJ3GEYJ103V	1/10W 10K	1	
R4050	ERJ3GEYJ103V	1/10W 10K	1	
R4051	ERJ3GEYJ103V	1/10W 10K	1	
R4052	ERJ3GEYJ103V	1/10W 10K	1	
R4059	ERJ3GEYJ473V	1/10W 47K	1	
R4060	ERJ3GEYJ473V	1/10W 47K	1	
R4061	ERJ3GEYJ681V	1/10W 680	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R4062	ERJ3GEYJ681V	1/10W 680	1	
R4063	ERJ3GEYJ272V	1/10W 2.7K	1	
R4064	ERJ3GEYJ272V	1/10W 2.7K	1	
R4065	ERJ3GEYJ681V	1/10W 680	1	
R4066	ERJ3GEYJ681V	1/10W 680	1	
R4067	ERJ3GEYJ272V	1/10W 2.7K	1	
R4068	ERJ3GEYJ272V	1/10W 2.7K	1	
R4069	ERJ3GEYJ221V	1/10W 220	1	
R4070	ERJ3GEYJ221V	1/10W 220	1	
R4071	ERJ3GEYJ221V	1/10W 220	1	
R4072	ERJ3GEYJ221V	1/10W 220	1	
R4901	ERJ3GEY0R00V	1/10W 0	1	
R4903	ERJ3GEY0R00V	1/10W 0	1	
R7101	ERJ3GEYJ103V	1/10W 10K	1	
R7102	ERJ3GEYJ103V	1/10W 10K	1	
R7103	ERJ6GEYJ201V	1/8W 200	1	
R7104	ERJ6GEYJ201V	1/8W 200	1	
R7105	ERJ6GEYJ201V	1/8W 200	1	
R7106	ERJ6GEYJ151V	1/8W 150	1	
R7108	ERJ3GEYJ473V	1/10W 47K	1	
R7110	ERJ3GEYJ473V	1/10W 47K	1	
R7112	ERJ3GEYJ473V	1/10W 47K	1	
R7114	ERJ3GEYJ473V	1/10W 47K	1	
R7401	ERJ3GEYJ101V	1/10W 100	1	
R7402	ERJ3GEYJ472V	1/10W 4.7K	1	
R7403	ERJ3GEYJ472V	1/10W 4.7K	1	
R7442	ERJ3RBD222V	1/16W 2.2K	1	
R7443	ERJ3RBD102V	1/16W 1K	1	
R7444	ERJ3RBD153V	1/16W 15K	1	
R7445	ERJ3RBD222V	1/16W 2.2K	1	
R7446	ERJ3RBD133V	1/16W 13K	1	
R7503	ERJ3GEYJ102V	1/10W 1K	1	
R7504	ERJ3GEYJ103V	1/10W 10K	1	
R7505	D1BB1502A012	2W 1.5K	1	
R7506	ERJ3GEYF152V	1/10W 1.5K	1	
R7507	ERJ3GEYF562V	1/10W 5.6K	1	
R7508	ERJ3GEY0R00V	1/10W 0	1	
R7510	ERJ3RBD273V	1/16W 27K	1	
R7511	ERJ3GEY0R00V	1/10W 0	1	
R7515	ERJ3GEYJ103V	1/10W 10K	1	
R7516	ERJ3GEYJ473V	1/10W 47K	1	
R7517	ERJ3GEYJ101V	1/10W 100	1	
R7518	ERJ3GEYJ101V	1/10W 100	1	
R7519	ERJ3RBD822V	1/16W 8.2K	1	
R7520	ERJ3RBD822V	1/16W 8.2K	1	
R7521	ERJ3RBD822V	1/16W 8.2K	1	
R7522	ERJ3GEYJ101V	1/10W 100	1	
R7523	ERJ3GEYJ101V	1/10W 100	1	
R7524	ERJ3GEYJ472V	1/10W 4.7K	1	
R7525	ERJ3GEY0R00V	1/10W 0	1	
R7526	ERJ3GEYJ274V	1/10W 270K	1	
R7527	ERJ3GEY0R00V	1/10W 0	1	
R7528	ERJ3GEYJ103V	1/10W 10K	1	
R7529	ERJ3GEYJ101V	1/10W 100	1	
R7530	ERJ3GEYJ101V	1/10W 100	1	
R7531	ERJ3GEYJ101V	1/10W 100	1	
R7532	ERJ3GEYJ473V	1/10W 47K	1	
R7533	ERJ3GEYJ473V	1/10W 47K	1	
R7534	ERJ3GEYJ473V	1/10W 47K	1	
R7535	ERJ3GEYJ511V	1/10W 510	1	
R7536	ERJ3GEYJ202V	1/10W 2K	1	
R7537	ERJ3GEYJ202V	1/10W 2K	1	
R7538	ERJ3GEYJ473V	1/10W 47K	1	
R7539	ERJ3GEYJ472V	1/10W 4.7K	1	
R7540	ERJ3GEYJ473V	1/10W 47K	1	
R7542	ERJ3GEYJ473V	1/10W 47K	1	
R7543	ERJ3GEYJ473V	1/10W 47K	1	
R7544	ERJ3GEYJ473V	1/10W 47K	1	
R7545	ERJ3GEYJ101V	1/10W 100	1	
R7546	ERJ3GEYJ473V	1/10W 47K	1	
R7548	ERJ3GEYJ101V	1/10W 100	1	
R7549	ERJ3GEYJ101V	1/10W 100	1	
R7550	ERJ3GEYJ473V	1/10W 47K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R7552	ERDS2TJ331T	1/4W 330	1	
R7553	ERJ3GEYJ103V	1/10W 10K	1	
R7555	ERJ3GEYJ333V	1/10W 33K	1	
R7556	ERJ3GEYJ332V	1/10W 3.3K	1	
R7557	ERJ3GEYJ473V	1/10W 47K	1	
R7558	ERJ3GEYJ470V	1/10W 47	1	
R7559	ERJ3GEYJ473V	1/10W 47K	1	
R7562	ERJ3GEYJ473V	1/10W 47K	1	
R7563	ERJ3GEYJ153V	1/10W 15K	1	
R7564	ERJ3GEYJ102V	1/10W 1K	1	
R7565	ERJ3GEYJ103V	1/10W 10K	1	
R7566	ERJ3GEYJ103V	1/10W 10K	1	
R7567	ERJ3GEYJ821V	1/10W 820	1	
R7568	ERJ3GEYJ303V	1/10W 30K	1	
R7569	ERJ3GEYJ223V	1/10W 22K	1	
R7570	ERJ3GEYJ104V	1/10W 100K	1	
R7581	ERDS2TJ392T	1/4W 3.9K	1	
R7582	ERJ3GEYJ101V	1/10W 100	1	
R7583	ERJ3GEYJ101V	1/10W 100	1	
R7584	ERJ3GEYJ101V	1/10W 100	1	
R7591	ERJ3GEYJ472V	1/10W 4.7K	1	
R7594	ERJ3GEYJ472V	1/10W 4.7K	1	
R7597	ERJ3GEYJ472V	1/10W 4.7K	1	
R7600	ERJ3RBD272V	1/16W 2.7K	1	
R7601	ERJ3RBD272V	1/16W 2.7K	1	
R7602	ERJ3RBD473V	1/16W 47K	1	
R7603	ERJ3RBD562V	1/16W 5.6K	1	
R7604	ERJ3RBD562V	1/16W 5.6K	1	
R7605	ERJ3RBD222V	1/16W 2.2K	1	
R7606	ERDS2TJ330T	1/4W 33	1	
R7607	ERJ3GEYJ472V	1/10W 4.7K	1	
R7608	ERJ3GEYJ473V	1/10W 47K	1	
R7614	ERJ3GEYJ101V	1/10W 100	1	
R7615	ERJ3GEYJ101V	1/10W 100	1	
R7616	ERJ3GEYJ101V	1/10W 100	1	
R7617	ERJ3GEYJ101V	1/10W 100	1	
R7618	ERJ3GEYJ101V	1/10W 100	1	
R7619	ERJ3GEYJ101V	1/10W 100	1	
R7621	ERDS2TJ100T	1/4W 10	1	
R8001	ERJ3GEYJ103V	1/10W 10K	1	
R8002	ERJ3GEYJ101V	1/10W 100	1	
R8003	ERJ3GEYJ101V	1/10W 100	1	
R8004	ERJ3GEYJ101V	1/10W 100	1	
R8005	ERJ3GEYJ101V	1/10W 100	1	
R8006	ERJ3GEYJ103V	1/10W 10K	1	
R8009	ERJ3GEYJ332V	1/10W 3.3K	1	
R8010	ERJ3GEYJ752V	1/10W 7.5K	1	
R8012	ERJ3GEY0R00V	1/10W 0	1	
R8013	ERJ3GEYJ472V	1/10W 4.7K	1	
R8016	ERJ3GEYJ103V	1/10W 10K	1	
R8017	ERJ6GEYJ241V	1/8W 240	1	
R8018	ERJ3GEYJ220V	1/10W 22	1	
R8019	ERJ3GEYJ752V	1/10W 7.5K	1	
R8021	ERJ3GEYJ103V	1/10W 10K	1	
R8023	ERJ3GEYJ473V	1/10W 47K	1	
R8024	ERJ3GEYJ752V	1/10W 7.5K	1	
R8028	ERJ3GEYJ103V	1/10W 10K	1	
R8029	ERJ6GEYJ241V	1/8W 240	1	
R8030	ERJ3GEYJ221V	1/10W 220	1	
R8031	ERJ3GEYJ221V	1/10W 220	1	
R8035	ERJ3GEYJ103V	1/10W 10K	1	
R8036	ERJ3GEY0R00V	1/10W 0	1	
S7001	EVQPC105K	SWITCH	1	
S7501	EVQPC105K	SWITCH	1	
S7502	EVQPC105K	SWITCH	1	
S7503	EVQPC105K	SWITCH	1	
S7504	EVQPC105K	SWITCH	1	
S7505	EVQPC105K	SWITCH	1	
S7506	EVQPC105K	SWITCH	1	
S7507	EVQPC105K	SWITCH	1	
T7501	G4D1A0000094	TRANSFORMER	1	⚠

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
W601	ERJ6GEY0R00V	1/8W 0	1	
W602	ERJ3GEY0R00V	1/10W 0	1	
W603	ERJ6GEY0R00V	1/8W 0	1	
W604	ERJ3GEY0R00V	1/10W 0	1	
W605	ERJ3GEY0R00V	1/10W 0	1	
W606	ERJ3GEY0R00V	1/10W 0	1	
W607	ERJ6GEY0R00V	1/8W 0	1	
W608	ERJ6GEY0R00V	1/8W 0	1	
W609	ERJ3GEY0R00V	1/10W 0	1	
W610	ERJ3GEY0R00V	1/10W 0	1	
W611	ERJ3GEY0R00V	1/10W 0	1	
W612	ERJ3GEY0R00V	1/10W 0	1	
W613	ERJ3GEY0R00V	1/10W 0	1	
W614	ERJ6GEY0R00V	1/8W 0	1	
W615	ERJ6GEY0R00V	1/8W 0	1	
W616	ERJ6GEY0R00V	1/8W 0	1	
W617	ERJ6GEY0R00V	1/8W 0	1	
W618	ERJ6GEY0R00V	1/8W 0	1	
W619	ERJ6GEY0R00V	1/8W 0	1	
W620	ERJ3GEY0R00V	1/10W 0	1	
W621	ERJ6GEY0R00V	1/8W 0	1	
W622	ERJ6GEY0R00V	1/8W 0	1	
W623	ERJ6GEY0R00V	1/8W 0	1	
W624	ERJ6GEY0R00V	1/8W 0	1	
W625	ERJ6GEY0R00V	1/8W 0	1	
W626	ERJ6GEY0R00V	1/8W 0	1	
W627	ERJ6GEY0R00V	1/8W 0	1	
W628	ERJ6GEY0R00V	1/8W 0	1	
W629	ERJ3GEY0R00V	1/10W 0	1	
W630	ERJ6GEY0R00V	1/8W 0	1	
W631	ERJ6GEY0R00V	1/8W 0	1	
W632	ERJ3GEY0R00V	1/10W 0	1	
W633	ERJ6GEY0R00V	1/8W 0	1	
W634	ERJ6GEY0R00V	1/8W 0	1	
W635	ERJ3GEY0R00V	1/10W 0	1	
W636	ERJ3GEY0R00V	1/10W 0	1	
W637	ERJ6GEY0R00V	1/8W 0	1	
W638	ERJ3GEY0R00V	1/10W 0	1	
W639	ERJ3GEY0R00V	1/10W 0	1	
W640	ERJ3GEY0R00V	1/10W 0	1	
W641	ERJ6GEY0R00V	1/8W 0	1	
W642	ERJ6GEY0R00V	1/8W 0	1	
W643	ERJ3GEY0R00V	1/10W 0	1	
W644	ERJ6GEY0R00V	1/8W 0	1	
W645	ERJ6GEY0R00V	1/8W 0	1	
W646	ERJ3GEY0R00V	1/10W 0	1	
W647	ERJ3GEY0R00V	1/10W 0	1	
W648	ERJ3GEY0R00V	1/10W 0	1	
X7501	H0A327200108	CRYSTAL OSCILLATOR	1	
X7502	H0D100500018	CRYSTAL OSCILLATOR	1	
X8001	H0D800400020	CRYSTAL OSCILLATOR	1	
n	04	VEP01967A/VEP01973A	1	(POWER P.C.B.)
C1120	ECQU2A223MLC	0.022U	1	⚠
C1121	ECQU2A683MLC	100V 0.068U	1	
C1122	F1B2G1020002	400V 1000P	1	
C1123	F1B2G1020002	400V 1000P	1	
C1125	F1B2G1020002	400V 1000P	1	
C1143	EETHC2E151HY	250V 150U	1	
C1150	EEUFM1V680B	35V 68U	1	
C1151	F1B3A4720013	4700P	1	
C1152	ECJ2VC1H101J	50V 100U	1	
C1153	ECJ2VB1H332K	50V 3300P	1	
C1154	ECJ2VB1H102K	50V 1000P	1	
C1200	ECJ2VB1E104K	25V 0.1U	1	
C1201	ECJ2VB1E473K	25V 0.047U	1	
C1270	F2A1C182A621	16V 1800U	1	
C1271	F2A1C182A621	16V 1800U	1	
C1272	F2A1C102A625	16V 1000U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C1273	EEUFM1C121B	16V 120U	1	
C1274	ECJ2VB1E104K	25V 0.1U	1	
C1400	EEUFM1E221B	25V 220U	1	
C1401	ECJ2VF1C105Z	16V 1U	1	
C1402	ECJ2VB1H103K	50V 0.01U	1	
C1403	ECJ2VC1H391J	50V 390P	1	
C1404	ECJ2VB1H472K	50V 4700P	1	
C1405	ECJ2VB1H102K	50V 1000P	1	
C1406	F2A0J681A550	6.3V 680U	1	
C1407	EEUFM1E221B	25V 220U	1	
C1408	ECJ2VB1E104K	25V 0.1U	1	
C1409	ECJ2VB1E104K	25V 0.1U	1	
C1410	ECJ2VB1H223K	50V 0.023U	1	
C1411	ECJ2VC1H181J	50V 180P	1	
C1412	ECJ2VB1H103K	50V 0.01U	1	
C1413	F2A1A4710038	10V 470U	1	
C1421	ECJ2VB1E104K	25V 0.1U	1	
C1513	F2A1A4710038	10V 470U	1	
C1514	ECJ2VB1H103K	50V 0.01U	1	
C1601	EEUFM1E221B	25V 220U	1	
C1602	ECJ2VB1E104K	25V 0.1U	1	
C1603	ECJ2VB1E104K	25V 0.1U	1	
C1604	ECJ2VB1E104K	25V 0.1U	1	
C1605	ECJ2VC1H181J	50V 180P	1	
C1606	ECJ2VB1H103K	50V 0.01U	1	
C1607	F2A1A681A539	10V 680U	1	
C1608	ECJ2VB1E104K	25V 0.1U	1	
C1701	EEUFM1E221B	25V 220U	1	
C1702	ECJ1VB1C104K	16V 0.1U	1	
C1703	ECJ1VB1C104K	16V 0.1U	1	
C1704	ECJ1VB1H103K	50V 0.01U	1	
C1705	ECJ1VC1H121J	50V 120P	1	
C1706	ECJ1VB1H103K	50V 0.01U	1	
C1707	F2A0J681A550	6.3V 680U	1	
C1800	F2A1E4700048	25V 47U	1	
D1140	B0EDKT000009	DIODE	1	
D1151	B0HAGM000006	DIODE	1	
D1152	MAZ4100NMF	DIODE	1	
D1155	MAZ73000BC	DIODE	1	
D1156	MA2C165001VT	DIODE	1	
D1270	B0JBSG000010	DIODE	1	
D1400	B0JCPE000015	DIODE	1	
D1401	B0JCPD000021	DIODE	1	
D1601	B0JCPD000021	DIODE	1	
D1701	B0JCPE000015	DIODE	1	
D1800	MA2J11100L	DIODE	1	
IC1150	C0DACZH00022	IC	1	
IC1200	C0DAEMB00003	IC	1	
IC1400	C0DAAJG00007	IC	1	
IC1401	C0DBAKG00005	IC	1	
IC1501	C0EBJ0000143	IC	1	
IC1601	C0DBAKG00007	IC	1	
IC1701	C0DBAKG00005	IC	1	
IP1401	K5H3022A0013	IC PROTECTOR	1	⚠
IP1601	K5H3022A0013	IC PROTECTOR	1	⚠
L1120	G0B100E00002	COIL 10UH	1	
L1121	G0B100E00002	COIL 10UH	1	
L1270	G0A100H00025	COIL 10UH	1	
L1400	G0A100HA0023	COIL 10UH	1	
L1401	G0A330ZA0041	COIL 33UH	1	
L1402	G0A150ZA0041	COIL 15UH	1	
L1503	G0A100HA0023	COIL 10UH	1	
L1601	G0A150ZA0041	COIL 15UH	1	
L1701	G0A220ZA0041	COIL 22UH	1	
LB1123	J0JKB0000003	COIL	1	
LB1126	J0JHC0000048	FILTER	1	
LB1400	J0JHC0000048	FILTER	1	
LB1600	J0JHC0000048	FILTER	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
LB1700	J0JHC0000048	FILTER	1	
P1101	K2AA2H000007	AC INLET	1	(GT) ⚠
P1101	K2AB2H000004	AC INLET	1	(PC)(PL) ⚠
P1102	K1KB23A00004	CONNECTOR(23P)	1	
P1103	K1KA04AA0180	CONNECTOR(4P)	1	
Q1200	B3PBA0000237	TRANSISTOR	1	
Q1270	B1DHED000008	TRANSISTOR	1	
Q1400	B1DHDD000022	TRANSISTOR	1	
Q1600	B1DHDD000022	TRANSISTOR	1	
Q1700	B1DDCC000009	TRANSISTOR	1	
QR1301	UNR221300L	TRANSISTOR	1	
QR1302	UNR221300L	TRANSISTOR	1	
QR1303	UNR221300L	TRANSISTOR	1	
QR1304	UNR221300L	TRANSISTOR	1	
QR1800	UNR211300L	TRANSISTOR	1	
QR1801	UNR221300L	TRANSISTOR	1	
R1150	ERJ6GEYJ4R7V	1/8W 4.7K	1	
R1151	ERJ6GEYJ153V	1/8W 15K	1	
R1152	ERJ6GEYJ103V	1/8W 10K	1	
R1153	ERJ6GEYJ4R7V	1/8W 4.7K	1	
R1154	ERJ6RBD562V	1/10W 5.6K	1	
R1155	ERJ6GEYG102V	1/8W 1K	1	
R1156	ERJ6GEYG153V	1/8W 15K	1	
R1157	ERJ6GEY0R00V	1/8W 0	1	
R1200	ERJ6GEYG122V	1/8W 1.2K	1	
R1201	ERJ6GEYG822V	1/8W 8.2K	1	
R1206	ERJ6GEYG242V	1/8W 2.4K	1	
R1207	ERJ6GEYJ103V	1/8W 10K	1	
R1208	ERJ6GEYJ241V	1/8W 240	1	
R1209	ERJ6GEYJ102V	1/8W 1K	1	
R1210	ERJ6GEYJ102V	1/8W 1K	1	
R1270	ERJ6GEYJ472V	1/8W 4.7K	1	
R1271	ERJ6GEYJ472V	1/8W 4.7K	1	
R1311	ERJ6GEYJ472V	1/8W 4.7K	1	
R1401	ERJ6GEYJ104V	1/8W 100K	1	
R1402	ERJ6RBD821V	1/10W 820	1	
R1404	ERJ6RBD102V	1/10W 1K	1	
R1405	ERJ6GEYJ513V	1/8W 51K	1	
R1406	D1BFR0270001	1/2W 0.027	1	
R1407	ERJ6RBD272V	1/10W 2.7K	1	
R1409	ERJ6RBD472V	1/10W 4.7K	1	
R1410	ERJ6RBD151V	1/10W 150	1	
R1411	ERJ6RBD123V	1/10W 12K	1	
R1518	ERJ6GEYJ473V	1/8W 47K	1	
R1601	D1BFR0150001	1/2W 0.015	1	
R1602	ERJ6GEYJ513V	1/8W 51K	1	
R1603	ERJ6RBD242V	1/10W 2.4K	1	
R1604	ERJ6RBD153V	1/10W 15K	1	
R1605	ERJ6RBD272V	1/10W 2.7K	1	
R1701	D1BFR047A010	1/2W 0.047	1	
R1702	ERJ3GEYJ333V	1/10W 33K	1	
R1703	ERJ3GEY0R00V	1/10W 0	1	
R1704	ERJ3RBD103V	1/16W 10K	1	
R1705	ERJ3RBD472V	1/16W 4.7K	1	
R1800	ERJ6GEYJ471V	1/8W 470	1	
R1801	ERJ6GEYJ104V	1/8W 100K	1	
R1802	ERJ6GEYJ472V	1/8W 4.7K	1	
R1803	ERJ6GEYJ103V	1/8W 10K	1	
T1150	G4D2A0000217	TRANSFORMER	1	⚠
VA1110	ERZV10D471C2	SURGE ABSORBER	1	
ZA1103	EYF52BCY	FUSE HOLDER	1	
ZA1104	EYF52BCY	FUSE HOLDER	1	
n	05	VEP07A76B	1	(TUNER P.C.B.)

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C7801	F2A1H2R2A234	50V 2.2U	1	
C7802	ECJ1VB1C333K	16V 0.033U	1	
C7803	ECJ1VB1C104K	16V 0.1U	1	
C7804	ECJ1VB1E223K	25V 0.022U	1	
C7805	ECJ1VB1C104K	16V 0.1U	1	
C7806	F2A1H3R3A234	50V 3.3U	1	
C7807	F2A1HR33A234	50V 33U	1	
C7808	F2A1V100A184	35V 10U	1	
C7809	ECJ1VF1C334Z	16V 0.33U	1	
C7810	ECJ1VB1C104K	16V 0.1U	1	
C7811	ECJ1VB1A224K	10V 0.22U	1	
C7812	F2A0J470A245	6.3V 47U	1	
C7813	ECJ1VB1H103K	50V 0.01U	1	
C7814	ECJ1VB1H102K	50V 1000P	1	
C7815	F2A1H4R7A234	50V 4.7U	1	
C7816	F2A1H2R2A234	50V 2.2U	1	
C7817	F2A1H2R2A234	50V 2.2U	1	
C7818	ECJ1VB1E223K	25V 0.022U	1	
C7819	ECJ1VB1E223K	25V 0.022U	1	
C7820	F2A1H2R2A234	50V 2.2U	1	
C7823	F2A0J470A245	6.3V 47U	1	
C7824	ECJ1VB1H103K	50V 0.01U	1	
C7825	F2A1H1R0A234	50V 1U	1	
C7826	ECJ1VB1H103K	50V 0.01U	1	
D7801	MAZ73000BC	DIODE	1	
FL7801	EFCT4R5MS5W	FILTER	1	
IC7801	AN5832SA-E1V	IC	1	
K7801	ERJ3GEY0R00V	1/10W 0	1	
LB7801	J0JHC0000032	COIL	1	
PS7801	K1KB13B00013	CONNECTOR(FEMALE) 13P	1	
Q7801	2SB1218A0L	TRANSISTOR	1	
R7801	ERJ3GEY0R00V	1/10W 0	1	
R7802	ERJ3GEYJ103V	1/10W 10K	1	
R7803	ERJ3GEYJ332V	1/10W 3.3K	1	
R7804	ERJ3GEYJ103V	1/10W 10K	1	
R7805	ERJ3GEYJ331V	1/10W 330	1	
R7806	ERJ3GEYJ331V	1/10W 330	1	
R7807	ERJ3GEYJ184V	1/10W 180K	1	
R7808	ERJ3GEYJ331V	1/10W 330	1	
R7809	ERJ3GEYJ331V	1/10W 330	1	
R7810	ERJ3GEY0R00V	1/10W 0	1	
R7811	ERJ3GEYJ102V	1/10W 1K	1	
R7812	ERG2SJ471E	2W 470	1	
R7813	ERG2SJ471E	2W 470	1	
R7814	ERJ3GEYJ681V	1/10W 680	1	
R7815	ERJ3GEYJ101V	1/10W 100	1	
R7816	ERJ3GEYJ101V	1/10W 100	1	
TU7801	ENGF6503GRF	TUNER PACK	1	
W1	ERJ3GEY0R00V	1/10W 0	1	
W2	ERJ6GEY0R00V	1/8W 0	1	
W3	ERJ6GEY0R00V	1/8W 0	1	
W4	ERJ3GEY0R00V	1/10W 0	1	
W501	ERJ3GEY0R00V	1/10W 0	1	
W502	ERJ6GEY0R00V	1/8W 0	1	
W503	ERJ3GEY0R00V	1/10W 0	1	
W504	ERJ3GEY0R00V	1/10W 0	1	
W505	ERJ3GEY0R00V	1/10W 0	1	
W506	ERJ3GEY0R00V	1/10W 0	1	
W508	ERJ3GEY0R00V	1/10W 0	1	
W509	ERJ3GEY0R00V	1/10W 0	1	
W510	ERJ6GEY0R00V	1/8W 0	1	
W511	ERJ6GEY0R00V	1/8W 0	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
W512	ERJ3GEY0R00V	1/10W 0	1	
W513	ERJ6GEY0R00V	1/8W 0	1	
W514	ERJ6GEY0R00V	1/8W 0	1	
W515	ERJ6GEY0R00V	1/8W 0	1	
W516	ERJ3GEY0R00V	1/10W 0	1	
W517	ERJ6GEY0R00V	1/8W 0	1	
W518	ERJ6GEY0R00V	1/8W 0	1	
W519	ERJ3GEY0R00V	1/10W 0	1	
W520	ERJ6GEY0R00V	1/8W 0	1	
W521	ERJ3GEY0R00V	1/10W 0	1	
n	06	VEP73121B	1	(SD CARD P.C.B.)
C6801	ECJ1VB1H103K	50V 0.01U	1	
FL6801	F1H0J1050025	FILTER	1	
LB6801	J0JHC0000032	COIL	1	
LB6802	J0JHC0000045	COIL	1	
P6802	K1KB14A00073	CONNECTOR(14P)	1	
P6803	K1NA09E00027	CONNECTOR(9P)	1	
R6801	ERJ3GEYJ101V	1/10W 100	1	
R6802	ERJ3GEYJ220V	1/10W 22	1	
R6803	ERJ3GEYJ220V	1/10W 22	1	
R6804	ERJ3GEYJ223V	1/10W 22K	1	
R6805	ERJ3GEYJ123V	1/10W 12K	1	
R6807	ERJ3GEYJ223V	1/10W 22K	1	
RX6801	D1H82204A024	RESISTOR-RESISTOR	1	
RX6802	D1H81234A024	RESISTOR-RESISTOR	1	
n	10	VEP73132A	1	(DV JACK P.C.B.)
P37001	K1KA06B00181	CONNECTOR(6P)	1	
P37002	K2HZ104B0012	CONNECTOR(104P)	1	